

# The Boston Medical and Surgical Journal

## TABLE OF CONTENTS

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THE MASSACHUSETTS MEDICAL SOCIETY		MISCELLANY
SECTION OF SURGERY		Fifty-second Annual Meeting of the American Public Health Association..... 451
Acute Perforations of the Stomach and Duodenum. By Charles L. Gibson, M.D., New York.....	425	Fire Prevention Week..... 452
Discussion of Dr. Gibson's Paper.....	430	Noted Surgeon Joins Woman's Medical College Staff..... 452
How the Pathology Explains the Clinical Symptoms Found in Ectopic Gestation. By John Osborn Polak, M.D., F.A.C.S., Brooklyn, N. Y.....	433	Worcester District Medical Society..... 452
Discussion of Dr. Polak's Paper.....	435	Franklin and Hampshire District Medical Societies..... 453
		Résumé of Communicable Diseases, July, 1923..... 453
ORIGINAL ARTICLES		DIABETIC COLUMN
The Art and the Science of Medicine. By Donald Gregg, M.D., Wellesley.....	428	An Argument for Stating Diets in Grams per Kilo Body-Weight..... 455
Modern Surgery of the Prostate Gland. By Oswald Schwinneg Louwley, A.B., M.D., F.A.C.S., New York City.....	441	News Items..... 455
MEDICAL PROGRESS		OBITUARY
Progress in Dermatology. By Harvey P. Towle, M.D., Boston.....	444	Everett M. Bowker, M.D..... 455
BOOK REVIEWS		CORRESPONDENCE
The Riddle of the Rhine. By Victor Lefebure.....	448	The A. M. A. Automobile Emblem. Noel G. Monroe..... 456
Chronologia Medica. By Sir D'Arcy Power and C. J. S. Thompson.....	448	NOTICES
EDITORIALS		Death Notices..... 456
Few.....	449	Middlesex North District..... 456
Boston Psychopathic Hospital.....	450	THE MASSACHUSETTS MEDICAL SOCIETY
William M. Robb.....	451	Stated Meeting of the Council..... 456
The Joint Meeting of the Four Western Districts.....	451	Society Meetings..... 456

## The Massachusetts Medical Society

### SECTION OF SURGERY

SESSION HELD AT PITTSFIELD, JUNE 12, 1923

#### ACUTE PERFORATIONS OF THE STOMACH AND DUODENUM

BY CHARLES L. GIBSON, M.D., NEW YORK

This paper is based chiefly on 76 consecutive operations performed by me and my associates at the New York Hospital in the last ten years. The bulk of these cases has been reported in a paper published in the *American Journal of the Medical Sciences* for June, 1923.

The subject can be best considered from the standpoint of (1) diagnosis, (2) time elapsed before treatment is instituted, (3) choice of treatment, (4) end-results.

(1) The importance of prompt diagnosis, leading to early operation, with possibility of cure, overshadows the whole question. Quite a number of conditions which should be differentiated could be easily cleared up with a little time for observation and more detailed investigation. It is, however, this precious element of time that we cannot spare, and in order to

save life by doing an early operation we must reconcile ourselves to an occasional mistake. Fortunately, the conditions giving rise to legitimate confusion are for the most part other acute abdominal emergencies, particularly appendicitis, and there is no actual mistake.

In my experience, which is not confined to this series here reported, I have made two mistakes which did not fall into this category: one was in the face of an impending pneumonia which gave all typical symptoms of perforation and had been certified to by a competent internist as being free of such a possibility, and the other was a calculus in the upper ureter which gave rise to the most terrific pain, local tenderness, and retraction of the abdomen, and other usual characteristic manifestations.

When the history is misleading or the maximum symptoms, as sometimes happens, are located in the upper rather than the lower abdomen, a diagnosis of gastric ulcer rather than appendicitis is almost inevitable. If, however, the possibility of confusion is remembered, the incision can be so placed that the further operative procedures necessitated by the change in diagnosis can be easily instituted. The mistaken diagnosis of appendicitis is extremely common in the late cases where the picture is entirely changed and we are dealing with a peritonitis with its classical symptoms, particularly distention of the lower abdomen as op-

posed to the localized tenderness and retraction of the upper abdomen of the early stage.

For the purposes of simplicity I have grouped the symptoms of both gastric and duodenal ulcerations under one heading, as they differ very little, the great bulk of all these perforations being located close to the pylorus.

Like many other conditions, the diagnosis of acute gastric or duodenal perforation is easy if one happens to have his attention attracted to the possibility. The most frequent mistakes are made, I think, in having some feature attract attention to some other condition and centering all observation on this point. The practitioner who does not see these cases very often and is not familiar with the sequence of events gets confused often by some of the following:

(a) While the majority of patients give a history of more or less definite previous gastric disturbances, a number deny any prior manifestations.

(b) While vomiting subsequent to pain is common, a few patients do not, and the vomiting of blood by any is an exception.

(c) The retraction of the abdomen in the early stages is very marked and manifests nature's effort to splint the abdomen to diminish pain consequent on the respiratory excursion. The practitioner is familiar with the developments following perforation, especially the pain representing a peritonitis, and peritonitis to him quite naturally means a distended abdomen. This distention of the abdomen will eventually occur when the peritonitis and subsequent distention of the intestines have set in; but this is a later manifestation and usually not pronounced until 24 hours later. As a matter of fact, cultures taken from the peritoneal fluid within the first 24 hours are usually sterile.

(d) *Pain in the lower abdomen—particularly the right iliac fossa.* With the progress of the extravasation and the development of a peritonitis, the accumulated fluid tends to gravitate downwards, usually along the right gutter, forming a distinct pocket between the abdominal wall and the caecum, and causing there a rather greater tenderness than elsewhere.

(e) *The lack of obliteration of the liver dullness.* The perforation of the gastro-intestinal tract should in theory allow of the escape of free air to obliterate the liver dullness. As a matter of fact, in the early stages the amount of air is often very slight. Personally, I don't recognize the existence of the sign of obliteration of the liver dullness unless it shows on percussion a tympanitic note posteriorly over the area of normal liver flatness. In the same way I think the so-called obliteration of the liver dullness anteriorly generally means tympany transmitted from the neighboring greatly dilated colon. This sign is a pernicious one in that it sounds attractive and has got into the text-

books, although in a considerable experience I have never been able to verify it, even when the fluoroscope or x-ray picture has demonstrated clearly a layer of air between the liver and the diaphragm.

(f) At the onset the temperature is quite useless. It may be low; it seldom is very high, and, in fact, an early high temperature should diminish the probability of perforation (pneumonia-typhoid).

(g) *The findings revealed by blood counts.* In the early stages they are quite useless. The only suggestive feature would be revealed by a marked leukopenia suggestive of typhoid.

The diagnosis can ordinarily be made with great ease by the history and physical findings. In a well-equipped hospital and also in the operative procedures further confirmatory measures may be employed.

Permit me to cite a recent case which fulfils every possible diagnostic requirement:

Name: Charles M. Age: 28. Admitted: March 29, 1923.

*Present Illness:* Mild gastric manifestations about two weeks before present illness. One hour ago developed sudden sharp pain in right upper abdomen, causing collapse. Shortly afterwards marked pain appeared in the region of the lower cervical spine, but did not persist.

*Examination:* Shows patient moderately developed and nourished, in great pain and moderate shock. There is no obliteration of the liver dullness.

*Fluoroscopic Examination:* Examination under fluoroscope and x-ray plate shows a distinct layer of air under the diaphragm on the right side, possibly also less clearly on the left side.

*Operation:* Prior ingestion of methylene blue. Peritoneum opened under water. Much gas and presence of methylene blue in the abundant rosy fluid. Perforation  $\frac{3}{8}$ " in diameter on gastric side of pylorus.

*Convalescence:* Good recovery, with slight superficial infection of wound. Discharged April 12, 1923.

This case shows all the possible diagnostic points:

1. Previous gastric history.
2. Sudden onset with collapse and typical abdominal findings.
3. *Secondary or referred pain*—a very characteristic diagnostic feature, commonly in the supraclavicular fossa, usually the left. This secondary pain comes shortly after the original pain and usually does not last long. It is apt to be forgotten by the patient and is not usually mentioned in books.
4. The presence of air, free in the abdominal cavity, as demonstrated by fluoroscopy and x-ray picture.
5. The absence of the sign designated as "obliteration of the liver dullness." Never seen by me in any perforation of gastro-intestinal tract.
6. The presence of air free in the abdominal cavity when the peritoneum is opened between

two clamps, wound being flooded with water. The escape of air is absolute proof of a perforation of the gastro-intestinal tract. On the other hand, a perforation may exist without this sign being present.

air under the diaphragm showed a transposition of viscera, and operation was planned to expose the pylorus by an incision to the outer border of the *left* rectus muscle. Operation through this incision verified the condition and



FIG. 1. Charles M.—Showing layer of air under diaphragm.

7. The presence of methylene blue in the abdominal contents.

As showing the possible refinements of diagnosis: Joseph T., admitted April 16, 1923, two hours after perforation. Fluoroscopy to detect

a perforation  $\frac{3}{4}$ " in diameter was found in the upper surface juxta pyloric.

In a typical case, the condition is unmistakable. Previous history points to gastric disturbance, usually of long duration. Patient is

suddenly seized with a most agonizing, stabbing pain in the epigastrium, very often causing him to fall in collapse, and showing signs of shock, sweating and anxiety. The abdomen, particularly the epigastrium, is absolutely boardlike. Patient's agony is great and he begs

the diagnosis. This is a pain referred for the most part to the supraclavicular fossa, usually the left. Sometimes it is in the upper part of the back or the shoulder or even the base of the neck. This second pain is usually of short duration. The patient forgets about it in his



FIG. 2. Joseph T.—Transposed viscera.

for relief. Following the initial pain he may vomit, usually only once, blood being exceptional. A few minutes after these initial manifestations comes in about a third of the cases a second pain which, I think, absolutely clinches

anxiety over the increasing original pain, and he may even deny having had such a pain when questioned at the time. Eventually, when he is recovering, he may volunteer that he had originally forgotten the secondary pain.

The typical picture and the severity of the symptoms are sometimes modified by the size of the perforation, the amount of extravasation, and whether or not sealing of the perforation takes place either by adhesion of the omentum or some other structure, for instance, the gall-bladder. While in general a large perforation with sudden release of contents should give the maximum pain, I have seen the severest suffering with a pin hole opening and only a teaspoonful of extravasated matter.

TABLE I

SUMMARY OF 76 CASES OF ACUTE PERFORATIONS OF THE STOMACH AND DUODENUM

Cases	Perforations	Deaths	Per Cent.
57	12 hours }	4	6.7% (3.3%)
2	18 hours }		
5	24 hours }	1	20%
12	Over 24 hours }	8	66.6%

(2) Table I, I think, shows emphatically the good results of early intervention. While we like to operate on these patients within the first two or three hours if possible, our statistics show that within 18 hours these patients have an exceedingly good chance to get well, and, as stated before, a culture within that period is usually sterile, although there may be a very large amount of extravasation and peritoneal exudate. So soon, however, as the 18-hour limit has expired the chances are worse, and after the 24 hours the patient stands little or no chance.

It goes without saying that young patients in good physical condition will make better recoveries, and a considerable portion of our mortality has occurred in the elderly and diseased. We have lost in our 59 cases operated on within 18 hours only four patients, giving a mortality of 6.7 per cent.; but in two of these cases there were circumstances which markedly modify the mortality computation; *e.g.*, Male, 58, was in marked collapse at the time of operation, got out of bed the night after operation, drank some cold water, and collapsed. Temperature went to 105 degrees and pulmonary oedema developed, as verified by autopsy. The other patient died 45 days after operation, 23 days after an operation for empyema which could not be demonstrated to follow in any way the results of the first operation. (Autopsy.)

(3) Prior to taking the anesthetic the patient should be given a drink of water colored with methylene blue. This procedure is a great help in finding the perforation quickly. The incision should be placed so as to give immediate access to the pylorus, and the peritoneum should be seized with two forceps and the wound flooded with water. On nicking the peritoneum between the forceps air will generally escape, and the diagnosis is positive; but occa-

sionally there is so little air, particularly when the perforation has become plugged, that this sign is absent. Knowing where the perforation should be (juxta pyloric), it is quickly exposed and closed.

Personally, I have never had any serious difficulty in closing a perforation, usually doing so with a double purse string of fine chromicized catgut, and I can hardly conceive of following the advice of some to insert a drainage tube into the hole rather than to close it. Were I faced with the impossibility of a satisfactory closure I feel quite sure that I would resort to other measures—possibly a pylorotomy—rather than leave such a source of disaster.

During the operation the assistant evacuates all the extravasated contents and peritoneal exudate, particularly under the diaphragm and in the pelvis. I do not drain except in rare instances where some other operation has to be added, as a cholecystectomy when there is a complicating acute lesion of the gall-bladder.

*The question of gastro-enterostomy.* Discussions on acute perforations generally furnish arguments for and against gastroenterostomy. Personally I have performed it only once, the condition obviously calling for it. It is admitted, and our statistics show, that a certain number of these patients will develop further trouble, requiring operative procedures, and usually gastro-enterostomy, for a stenosis at or near the pylorus. On the other hand, the number of people who do develop such trouble is surprisingly small. We have had to reoperate on eight (10 per cent.) of our patients—gastro-enterostomy five times, a Polya-Mayo resection twice and a suture of a second perforation once.

We find that it is almost entirely the duodenal perforation close to the pylorus which gives rise to trouble. We feel there should be no hard and fast rules about dealing with this condition and that an experienced surgeon is quite justified in certain early cases,—who probably can stand the extra procedure,—in doing a gastroenterostomy as a prophylaxis of what seems to be an assuredly troublesome condition. We do, however, object very strongly to the recommendation of performing this operation as a routine procedure for the cure of the ulcer or prophylaxis of its sequelae.

The perforation seems to be a cure in most cases, and if in the stomach, unless actually impinging on the pylorus, secondary stenosis does not occur. We think that the reckless application of gastro-enterostomy may sometimes result in an unnecessary death. We think, also, that its routine use, more particularly in the gastric ulcers, may result in certain uncomfortable sequelae and complications which are inherent to this operation, *e.g.*, gastro-jejunal ulcers.

(4) *End-Results.* With the exception of the-

patients noted who required reoperation, the end-results are most satisfactory, and the patients reported themselves free from symptoms and enjoying much better health than before operation.

The following statistical data may be of interest:

(a) The relative immunity of women to acute perforations—only five out of 76, four of these being gastric.

(b) No patient under 20. Greatest number between 30 and 40.

(c) Duodenal ulcer gives severer symptoms and a longer history.

(d) Mortality of gastric ulcers a little higher than duodenal.

(e) The location of the ulcer was the same for both duodenal and gastric,—namely, 38 each.

#### DISCUSSION

DR. HOMER GAGE, Worcester: It is a great pleasure always to hear one of Dr. Gibson's reports. No one who has not had an opportunity as I have had of seeing the operation of his very complete system of following up his cases can fully appreciate how accurate and valuable are his statistics. In this group of cases which he has presented today he has laid especial emphasis on the lapse of time between perforation and operation.

Now this question of time is really a question of diagnosis. Early diagnosis is, of course, very difficult to make with assurance, and often cannot be made from the condition present at examination. An accurate and complete clinical history of the patient is of the utmost importance. And I should like to emphasize again, as I have often before, the value of a good clinical history; physical examination and laboratory findings must be reconciled with the history before they can be accepted as a reliable guide for surgical interference, unless a reliable history cannot be obtained.

I want especially to emphasize the importance of the history in these cases of acute intra-abdominal perforation; the record of previous gastric disturbance is often the main factor in determining the location and nature of the lesion. In perforation of an ulcer of the posterior wall of the stomach into the lesser peritoneal cavity, diagnosis is often of the greatest difficulty; and I have myself been in so much doubt that I have delayed operation for several days, when, if I had given more consideration to the history of previous digestive disturbances I should have given my patient a much better chance for recovery.

I am very glad to hear what Dr. Gibson said about doing posterior gastro-enterostomy as a routine measure in these cases. Most of them are so desperately ill that one should be content with the simplest possible technique; and

his results show the relative unimportance of complicating the closure of the perforation with the establishing of the gastro-enterostomy. But I think that we should all agree that were it not for the increased hazard we should prefer to establish the artificial opening, and in cases where the patient's condition is very good, as it sometimes is, I think it may properly be done.

But one thing more. Few clinics have followed up their results better than Dr. Gibson, and have contributed more to our knowledge of what happens to those who pass successfully through major operations and a normal period of convalescence. I wish we might follow them still further and determine the effect of our surgical procedures on longevity.

In the presidential address before the Association of Life Assurance Medical Directors of America in 1917, I presented an actuarial study made of a small group of hysterectomies for uterine fibroid. It was too small to be of much value, but was made to illustrate the method of procedure. In 1919 Dr. Balfour presented a paper before the American Surgical Association on the Life Expectancy Following Operations for Gastric and Duodenal Ulcer,—proving beyond peradventure the great difference in the expected results of these important lesions.

There is a great deal of useful information along the same lines in the Medico Actuarial Tables used by the life insurance companies, and if this method could be made use of to study the results of our surgical procedures as affecting longevity, I am sure it would be of great value. It might show that all surgical interference had a tendency to shorten the life expectancy, and that some of it had better be left undone. I know the life insurance companies would be glad to help in this work if they could get the cooperation of the large clinics.

DR. J. M. BIRNIE, Springfield: I wish to speak about one method of procedure that may seem a little hazardous to some of us, and that is the question of omitting all drainage in these cases. The reader barely mentioned that he did not drain any of his operative cases. Most of us have not quite the courage to close the abdomen without some sort of a drain. Perhaps we are wrong. Dr. Gibson's cases show that we probably are. I wish to refer to a small series of consecutive cases operated upon at the Springfield Hospital during the past ten years. There were 28 cases in all, and of these 11 died, which gives an average mortality of 40 per cent. This may seem a bit high, but again there is the question of time, as Dr. Gibson has pointed out. Ten of these eleven were operated upon in not less than fourteen hours after perforation, and the longest elapsed time was 36 hours. One was operated upon in four hours, but was a man 62 years of age, and he died on the fourth

day after operation, of pneumonia. Of the 17 cases that lived, 13 were operated upon within 10 hours. One in 12 hours, one in 24 hours, and in two cases the time was uncertain.

In our series of the 28 cases, three were women, and they were all gastric ulcers. Of the 17 cases that survived operation, I was able to trace all of them and to obtain a final report. In none of these cases was gastro-enterostomy performed. There was simple closure of the wound with drainage. Of these 17 cases, there were only three who did not turn out well. This gives 82 per cent. of symptomatic cures. Of the three remaining cases, two of the men are at work but do not consider themselves well. They have had gastric symptoms, but not of sufficient severity to cause them to consider a second operation.

One case had a subsequent gastro-enterostomy 13 months after the original operation—marked stenosis requiring gastro-enterostomy. One rather interesting case in this series is of a man, who in 1917 had a gastro-enterostomy for an ulcer with pyloric stenosis. In 1921, he had a typical ruptured ulcer on the posterior wall of the stomach, not near the gastro-enterostomy opening. The patient died on the sixth day of pneumonia. He had refused operation for over fourteen hours.

I wish that we might have x-ray pictures on these cases. I have had x-ray pictures on three cases and, as you see, there was no six-hour residue and a pretty good duodenal cap. As Dr. Gibson has pointed out, and as our small series seems to show, simple closure will absolutely cure a large percentage of these cases of ruptured peptic ulcers, and gastro-enterostomy is not required.

Dr. I. S. F. DODD, Pittsfield: One of the symptoms that I have been impressed with after ruptures of gastric and duodenal ulcer, is the slow development of shock. While the abdomen will be boardlike in rigidity and the pain severe, requiring large doses of morphine for relief, yet it is not until several hours after the accident that symptoms of shock develop.

My cases have certainly had a smoother convalescence and better end-results when a gastro-enterostomy was done at the time of the first operation than with simple suture of the ulcer.

I have been impressed by the difference in the size of the rupture—sometimes a simple pinpoint and sometimes the rupture being as large as the end of one's finger. The important and vital question of surgery is time, especially after a rupture. This is especially so in ruptures of the intestinal tract.

My cases have all been in males, and relatively middle aged, with comparatively little history of previous indigestion.

It is probable that in a town like this we see

our cases earlier, and certainly see them oftener after an operation than men practicing in larger cities. The nearer the rupture occurs to the pylorus the more definite and positive the indication seems to be for a gastro-enterostomy.

The last word has not been said in gastro-intestinal surgery. We see in a meeting like this difference of opinion as well as of methods.

Dr. I. J. WALKER, Boston: I wish to speak a few words on the cases that we have had at the Boston City Hospital from June, 1915, to June, 1923. Altogether there were 156 cases. Reports have previously been made by me covering cases from 1905 to 1914, and by Dr. Hepburn covering cases from 1915 to 1920.

From the operative standpoint, the cases which I wish to report now may be roughly divided into four groups. The first are nine in number, that came into the hospital moribund, and in which it was absolutely out of the question to even consider operation. The diagnosis was made from the history and physical examination or by autopsy. Naturally, all these cases died.

The second group is not very much more encouraging. These cases were practically moribund and were 14 in number. The condition of the patient was so bad in this group that the peritoneal cavity was merely opened and drained, and no endeavor was made to search for the ulcer. Here again the diagnosis was made from the history and physical examination or by autopsy. Of these, 13 died and one lived, a mortality of 92.85 per cent. It is quite possible that some of these were cases of general peritonitis not due to perforation.

The third group includes 114 cases where simple closure of the ulcer was done and drainage used. Of these, 80 lived and 34 died, a mortality of 29.82 per cent.

The fourth group of 19 cases includes those where the perforations were closed, gastro-enterostomy done, and drainage of the peritoneal cavity. Of these, 15 lived and four died, a mortality of 21.05 per cent.

The average duration of perforation where simple closure was done was 24.8 hours; where closure plus gastro-enterostomy was done the duration was 12 hours.

I think Dr. Hepburn is to be congratulated on his low mortality in the series where he did gastro-enterostomy, a series which he has previously reported.

The most important data that I have derived from the study of these perforations follow:

I have attempted to follow up 67 cases of simple closure and drainage that occurred from June, 1915, to June, 1921. I have purposely omitted those that have occurred during the last two years, because of the fact that there has not been a long enough time intervened since

1921 to rule out the possibility of a recurrence of the ulcer. Of these 67 cases I have traced 29 and find that 20 have had a recurrence of their ulcer. This has been proven either by operation or x-rays. This gives a percentage of recurrences of 68.97 per cent.\* These figures are quite different from those of Drs. Gibson and Birnie.

I feel that the two most important factors which will lower the mortality are, first, the nature of the perforation, and secondly, the time intervening between the perforation and the time of operation. We all realize that if the perforation is gastric, the mortality is higher than if it is duodenal. It is also natural to expect that where a perforation is small or partially sealed off by omentum or adherent organs, and where the leakage is thus slight, the mortality will be much lower than where there is a large perforation and a profuse pouring of stomach or duodenal contents into the peritoneal cavity. Quite naturally, the longer the perforation exists before operation, the greater will be the peritonitis and subsequent mortality.

In short, I feel from the study of these cases that the two most important factors influencing the mortality are the character of the perforation and the interval existing between the perforations and the time of operation.

Other factors being equal in regard to the condition of the patient, I feel quite sure that one can safely do a gastro-enterostomy in addition to closure where the perforation has not existed over 12 hours, and that in many cases where it has existed from 12 to 24 hours, it may be done with safety, but where the perforation has existed more than 24 hours I think it is practically unwarranted except on very rare occasions where the perforation has been small and where not much peritonitis exists.

I must also add that from our figures, closure of the perforation will not warrant the prognosis that the patient will be relieved permanently of the ulcer, and that it recurs in these cases in the majority of instances.

DR. J. J. HEPBURN, Boston: Previous to November, 1918, I was one of those responsible for the poor results just reported by Dr. Walker. Since that time, every case that has come to my hands has been treated by closure of the perforation plus gastro-enterostomy with drainage. There were 13 cases with one death. The age varied from 22 to 72 years, the average age being 38. The time interval, that is, the time between onset and operation, was three hours in the shortest, and 36 hours as regards the longest case. There were two cases 30 hours and one case 36 hours after perforation. All

\*Since the above discussion, I have been able to trace three more of the 67 cases of closure without gastro-enterostomy which have had no recurrence of their ulcer symptoms. This would make a percentage of 62.5 per cent. of recurrences.

were subjected to gastro-enterostomies and all recovered. The average time interval was 11½ hours. I have no desire to discuss the merits of gastro-enterostomy in this condition. I simply present this small series for what it is worth. These cases were all operated at the Boston City Hospital, that is, in the same hospital and under the same conditions as were the cases reported by Dr. Walker. For consideration of the after-results, one case is too recent (operated seven weeks ago), one case could not be traced, and one case died. This leaves 10 cases under observation for from six months to nearly five years. These cases are all enjoying good health, taking ordinary diet, and are doing their usual work. Each is troubled occasionally with some epigastric distress, which is transitory and which I ascribe to adhesions about the drainage sinus.

DR. F. J. COTTON, Boston: There are one or two points I would like to take up, not in criticism of Dr. Gibson but in relation to routine treatment in our big hospitals. I happen to be a chief of service in the Boston City Hospital. We have a good many cases of this sort and they are necessarily operated on largely by younger members of the staff. They have been doing excellent work (not work, of course, of the type that an old expert like Dr. Gibson can do). At other hospitals the difference may be even greater. Our experience shows that the controlling factor is usually the time after perforation. A while ago we were having too many deaths, and looking this matter up found that these cases were being done without drainage. We corrected this and have had far better results since. It is these unfortunate results, included in his paper, that bring Dr. Walker's figures down. I do not believe it is safe for the average man to dispense with drainage in these cases. Again, as to gastro-enterostomy, the ideal operation, with an expert operator and a good team, adds little to the risk. This does not apply to a routine use of gastro-enterostomy by the average worker, and I have not seen or heard any figures that lead me to think this routine any better or as safe as the simple suture in most cases. To be considered, of course, are the type of patient, the time since perforation, and the actual condition, as shown by pulse, blood pressure, etc. There are, of course, a lot of cases in which it is all right and probably desirable to add gastro-enterostomy, but I cannot believe it safe as a routine. It is impossible to standardize this sort of operation, but I think the points here made should be borne in mind when we are considering the best method to advocate as the average procedure.

DR. C. H. RICHARDSON, Pittsfield: I would like to report a case which may be of interest to the members of this Society, and one which I think is quite unusual. Mr. A. B., age 39, who

gave a history of indefinite stomach trouble, was seized with excruciating pain in the epigastric region, which would indicate a perforated gastric ulcer. He remained at home for nearly a week under the care of his physician, when he was brought to the Hillcrest Hospital. Upon examination, I found a definitely outlined tumefaction in the right epigastric region. The man's symptoms indicated that this was an inflammatory mass, probably due to a small perforation which had walled itself off. Incision of the tumor proved this to be the case. Particles of undigested food were found in the dark-colored pus. A perforation was found at the pyloric end of the stomach about  $1\frac{1}{2}$  inches from the pyloric end of the stomach. No attempt was made to close the opening in the stomach, owing to his critical condition, but a large drainage tube was inserted. The man was fed by rectum and the stomach kept empty for about ten days. The drainage gradually ceased and the patient went home at the end of the sixth week. He made a rapid recovery and was able to return to work and remained well for about three years, when he began to have trouble again. I then advised a gastro-enterostomy. This is the only case of perforation of a gastric ulcer walled off that I have ever seen, though I have had one similar case, a perforated duodenal ulcer.

I have listened to the doctors' very excellent papers with much pleasure and interest. My personal feeling, however, is that if the patient is in any reasonable condition that a resection of the ulcer or a gastro-enterostomy gives the best chances of a permanent cure. I think that the use of a cigarette drain for two or three days is the best procedure, for if it is not needed it does no harm, and if needed it is needed badly. I therefore use a cigarette drain in all cases, to be on the safe side.

#### HOW THE PATHOLOGY EXPLAINS THE CLINICAL SYMPTOMS FOUND IN ECTOPIC GESTATION

BY JOHN OSBORN POLAK, M.D., F.A.C.S.,  
BROOKLYN, N. Y.

THE frequency of ectopic gestation justifies a consideration of the symptomatology and diagnosis, notwithstanding the fact that much has been written upon this same subject.

It is sometimes difficult to memorize symptoms, but it is never difficult to understand symptomatology if we have the pathological picture that is producing the symptom, constantly before us. In my short talk this afternoon, I shall endeavor to demonstrate why pregnancy occurring in the tube produces a *symptom-complex which is different* from that produced when the pregnancy is intra-uterine.

From a study of nearly 400 cases of ectopic, we may state that tubal gestation is found in three distinct groups of patients. First, in the woman who gives a previous history of some definite pelvic infection; this may have followed upon marriage—intra-uterine instrumentation, abortion, childbirth, or intra-abdominal operation, which was followed by peritonitis. After recovering from the infection, there is an intervening period of sterility, which has allowed sufficient time for the tube to partially regenerate, for the reestablishment of its lumen, a lumen of sufficient size to permit the transit of the spermatozoa, but not large enough to allow the passage of the fecundated ovum. The largest number of all ectopics fall in this class. The second group consists of women presenting a history of dysmenorrhea from the first occurrence of their menstrual function, and who, on examination, show many developmental defects, such as a funnel pelvis, an infantile uterus, a narrow, vaginal vault, long, tortuous tubes—in a word, these signs so commonly found in hypothyroidism. These patients have usually remained sterile after marriage for varying periods, and finally, following some procedure for the cure of their sterility, develop an ectopic. This makes up the *developmental class*—patients in whom it is not uncommon to find repeated ectopics. The third class is made up of that large group of women without any pathology who are constantly becoming pregnant. These women, apparently, get an ectopic in passing, due to an overgrowth of the fecundated ovum before its transit through the tube has begun.

Under this head we might also class the woman who has been operated for retroversion, by one of the round ligament operations, which has been poorly selected, and which, as a consequence, has angulated a relatively normal tube, and has caused an arrest of the fecundated ovum. It is generally admitted that, except for a few authenticated cases of ovarian pregnancy, all ectopics are primarily tubal. Anatomically, there are three points in the tube at which the ovum is commonly arrested: (1) in the ampulla, just distal to the neck; (2) in the isthmus; (3) in the interstitial portion of the tube. The occurrence at these points bears an almost constant ratio of 76, 21, and 3 per cent., respectively. The basic reason for the occurrence of abnormal symptoms in ectopic is the absence within the tube of a well-defined decidua.

In intra-uterine pregnancy the uterine wall is protected from the trophoblastic action of the cells covering the villi by the presence of a thick decidua, which allows the ovum to implant itself in this decidua, without doing damage to the underlying basal membrane, and the arterial and venous radicles of the submucosa.

This is not so in the tube; in the tube there is no true decidua. When the ovum becomes arrested in its transit toward the uterus and implants itself the tubal wall is exposed to the erosive action of the villi without decidual protection, for Nature had not expected the ovum to lodge here, and has made no preparation to protect the tube against this villous invasion. The best it could do in a hurry was to produce a decidual reaction, and not knowing exactly where the impregnated ovum was going to rest, this reaction is found at different points throughout the tube, but there is no point of concentrated resistance. It is due to this incomplete decidua and the effects which implantation of the ovum has on the unprotected tubal wall, that we have all of the cardinal symptoms of ectopic.

The cardinal symptoms of early tubal pregnancy may be summarized as follows:

1. A missed menstruation, a postponed menstruation, or a prolonged menstruation.
2. The sudden onset of abdominal pain, with or without shock, often referred to one or the other lower quadrants of the abdomen; always followed by a bloody vaginal discharge, which is dark, fluid and does not clot.
3. A sensitive cervix, sensitive to the slightest motion on vaginal examination.
4. A tender mass beside or behind or, rarely, in front of the uterus, displacing it.
5. A slight elevation of temperature, usually not over 100.4.
6. A leucocytosis of 15,000 or more, immediately following the attack of pain, with its bloody vaginal discharge, and,

Finally, exacerbations of pain, and gradual enlargement of the tumor mass, with slight elevation of temperature, while the patient is under observation. These make up the symptom-complex.

As in uterine pregnancy, tubal pregnancy may terminate in abortion, and tubal abortion is the most common form of ectopic gestation, and as in the uterus it is frequently incomplete, tubal rupture is less common.

When the ovum is arrested in its progress through the tube, it immediately attempts to erode itself into the mucosa, which being unprotected by a well-formed decidua, allows villous penetration of some of the smaller radicles in the submucosa. This is followed by hemorrhage into the decidua, and increase in the tube contents, the size of the tube, overstretching it and giving rise to two of the earliest symptoms, namely a feeling of soreness and tension, and shooting, knife-like pains, tube colic, evidencing the attempt of the tube to expel its foreign content. If one looks at the pathological specimens of unruptured tubal pregnancy one will see a tube distended to many times its diameter, edematous,

with areas of ecchymosis, where hemorrhage has taken place into the tube wall, the result of the villous erosion. This blood accumulation between the ovum and tube wall causes partial separation of the ovum or threatened tubal abortion, and just as we get bleeding in threatened uterine abortion, so we have bleeding in tubal abortion, but instead of coming out through the uterus, it comes out through the free end of the tube, gravitates to the cul-de-sac, and with the tube, which because of its increased weight has dropped downward and backward, displaces the uterus forward, and makes up the cul-de-sac mass so characteristic of ectopic.

The blood in the cul-de-sac causes a chemical reaction in the peritoneum, which excites a peritoneal reaction and causes the symptoms of temperature, leucocytosis, and sensitiveness of the cervix, for the overlying peritoneum is edematous and sensitive, and when the cervix is moved, the utero-sacrales, covered as they are with peritoneum, respond by spasm and pain.

This unrest in the tube is transmitted to the uterus, and the decidua there becomes intensely congested, and some bleeding takes place while the cervix softens and opens. Should the ovum die, the decidua in the uterus being no longer needed, will be cast off, either as a cast, which is unusual, or piecemeal, which is the usual manner in which the decidua is passed. During this time there is a bloody vaginal discharge, which is characteristic. It is brownish red, mixed with mucous fluid, and does not clot.

When tubal abortion occurs the clinical picture may be summarized as follows: A delayed, prolonged, or anomalous menstruation with continuous metrorrhagia. There may be pain or no pain, but there is usually soreness in one or the other lower quadrants. Physical examination reveals the characteristic bloody discharge, the sensitive cervix, and a sensitive mass in the posterior or lateral cul-de-sac. Tubal abortion usually occurs before the sixth week, while rupture seldom takes place before the eighth; when it does occur, what happens to the ovum depends on the site of the pregnancy, and the location of the rupture. In our experience the majority of isthmie pregnancies rupture into the folds of the broad ligament, and proceed either as an intraligamentous pregnancy, or die within the ligament, leaving a hematoma to become infected or absorbed. When rupture occurs, and the patient passes from the non-tragic into the tragic stage, the severity of her symptoms depends on the location of the point of rupture and its proximity to the larger blood vessels coursing along the tubes. Fortunately, the primary rupture in most cases is not fatal, and sufficient time is given, if the practitioner is always on the alert for an ectopic, to make a diagnosis possible. We teach that any woman is liable to ectopic; that where there is anom-

alous bleeding, a skipped menstruation, and abdominal pain, even when it is attributed to indigestion, ectopic should be suspected. When there is painful defecation or rectal tenesmus, associated with vaginal bleeding, always think of ectopic. That when called to see a woman in collapse, with any of the appearances of internal hemorrhage, always diagnose ectopic, for, in the majority of cases, you will be right, and in all cases she presents a surgical proposition.

The most difficult type of extra-uterine gestation that we have to deal with are those few cases where implantation of the ovum takes place in the interstitial portion of the tube; here, because of the greater amount of surrounding muscular structure, the pregnancy can develop to a very much greater size. We have seen it go for six months before the occurrence of rupture, but in reviewing the histories of these cases there have always been several periods at which the diagnosis was, or could have been made, on the occurrence of sudden pain and vaginal hemorrhage. Unfortunately, too many of this type of cases are examined under anesthesia, when the uterus loses its asymmetrical shape, and the examiner is deprived of that most valuable sign in all ectopics, i.e., the exquisite sensitiveness of the tumor mass.

#### CONCLUSION

I would call attention to the fact that no woman of any age, unless she is past the menopause, or has had all of her organs removed, is exempt from anomalous pregnancy. That the history is the most important diagnostic sign, for every symptom in the history is dependent on the growth of an ovum eroding itself into an unprotected tube wall.

#### DISCUSSION

DR. E. L. HUNT, Worcester: As we listened to this amazingly clear presentation of the pathology and symptomatology of ectopic pregnancy I am sure that we all felt we were being instructed by a master. So far as my experience as a general surgeon goes, I am sure that I am hardly qualified to add anything to what Dr. Polak has said. His clear exposition of the pathology and clinical manifestations dependent thereon should enable us to make a larger proportion of correct diagnoses. I think those we miss usually happen from failure to get accurate histories, especially as to the early and lesser but, as Dr. Polak has shown, not less significant symptoms. To have had these diagnostic points so clearly put to us is of great value. In cases of ectopic pregnancy that have gone to the point of rupture, and present the picture of acute internal hemorrhage, diagnosis is relatively easy, but if they are allowed to reach this condition too many die.

The point in operative technique recommended by Dr. Polak, namely, that we should leave the placenta *in situ*, where it is attached to the abdominal viscera, is new to me. I have not happened to encounter an instance of the abdominal form of ectopic pregnancy, and am glad to know how to deal with it if I do encounter it. I feel that we are all greatly indebted to Dr. Polak.

DR. STEPHEN RUSHMORE, Boston: This paper by Dr. Polak has been of great interest to me, and I have enjoyed greatly his presentation of the subject. Among the points that he has made, there are two the importance of which can hardly be over-emphasized, and I would like to repeat them.

The first is that the history of these cases is of the utmost importance in diagnosis. There is in nearly all of these cases a characteristic group of symptoms. But occasionally mistakes will be made. I recall one case in which there were characteristic history and findings on examination. But operation showed a uterine miscarriage, with a small ovarian tumor. Perhaps more careful study would have resulted in a correct diagnosis, which is possible in most cases.

Fortunately, the cases of advanced extra-uterine pregnancy are rare, but they may give rise to some of the most disturbing conditions with which the surgeon has to deal. In general, we do as little as possible, and Dr. Polak's advice to leave the placenta in place should be emphasized. He advises against drainage, and for drainage through the abdominal wall I agree, but occasionally vaginal drainage may be helpful. However, each case must be judged on its own merits.

I have found it convenient, in considering the symptoms of these cases, to think of them in four groups. First, the symptoms of a pregnancy; second, the symptoms of a disturbed pregnancy; third, the symptoms which are due to the disturbance of the Fallopian tube; and fourth, the symptoms which are due to a disturbance of the peritoneum apart from the covering of the tube. Now it is to this fourth group that I want to refer very briefly.

What is the reaction of the peritoneum? What happens when blood is introduced into the peritoneum? The physiology of the peritoneum is something of which we seem to know very little. We can introduce blood into the peritoneum, but it should not be foreign blood to resemble the condition of extra-uterine pregnancy. If blood of the same individual is introduced, the conditions of experimental work on blood are such that we introduce a great complexity of factors, as blood changes take place quickly. Why does blood not clot in the vessels, and why does it clot in the tissues? Why

does it not clot immediately in the peritoneal cavity, and why does it clot when it does, and why does it not stay clotted indefinitely? There is much we do not yet know about the peritoneum. It is, however, a very remarkable structure, in superficial extent about equal to the skin surface of the body, with great powers of exudation and resorption. If the rate at which either of these processes goes on in the first hour of experiment was continued, an amount of fluid equal to the entire body weight of the individual would pass through the peritoneum in from eight to twelve hours. Whether this has any relation to shock is not clear, but actually we find in cases of hemorrhage into the peritoneal cavity an amount of shock which is not proportionate to the amount of blood lost—it is greater than we should expect. It may be on account of the relation to the sympathetic nervous system. But it is to this condition of shock, which is not rare in extra-uterine pregnancy, that I want to direct attention.

What shall we do with these patients in whom there is intraperitoneal hemorrhage? I am reminded of what was said to me when I was a house officer by the late Dr. Percy Bolton of New York. I came to look up to him as a surgeon of excellent judgment. I called him up one night on account of a man who had symptoms of rupture of the kidney, and whose pulse had gradually risen to 120. He said, "if the patient's pulse goes over 140 call me again." The pulse continued to gradually rise but did not quite go over 140. The next morning at the ward visit, after inquiring about the patient's condition, Dr. Bolton said, with his very deliberate drawl, "You don't want to get excited about these things."

I would like to emphasize this in connection with extra-uterine pregnancies, because, as I look over the deaths I have seen from extra-uterine pregnancy, I think some of them may have been due to "getting excited." Dr. Polak has called attention to the fact that the surgeon does not like to operate when the patient is in shock. It has happened that nearly all of the patients I have seen die have been hurried to the hospital and operated on when they were in a condition of shock. On several occasions, when transfer to a hospital was not possible, and immediate operation was out of the question, I have seen patients sink into a condition of collapse and impending death, but I have also seen them gradually rally until their condition was good.

So I am strongly of the opinion that the best treatment for these patients in shock is non-operative; morphia freely, heat, elevation of the foot of the bed. Some patients will die no matter what you do. These are chiefly of the group in which rupture of the tube occurs close to the uterine cornu, perhaps in the cornu

itself. But more patients will recover if operation is postponed until shock is over.

There are a number of other points I might emphasize. One is that we do not try to get all the blood out of the peritoneal cavity. In the first place, it cannot be done. We can, however, remove most of the clots. In the second place, fluid blood in the peritoneal cavity can be absorbed, and so we leave in the fluid blood, for absorption, because hemoglobin is physiologically very precious material.

Again, may I say I have listened to Dr. Polak's paper with great pleasure.

DR. R. H. SEELYE, Springfield: Four or five years ago I read a paper before the New England Surgical Society on this subject, and, among other things, advocated, in the case of women who were shocked from hemorrhage, letting them alone, as far as immediate operation went, and waiting until they could be got into a better condition, if possible. I mentioned four cases which I had in the series of about fifty or sixty, two of which died after operation which was done in a condition of shock, and two got well after waiting for twelve hours or more.

I was criticized by every member of the Society, who spoke for waiting in these cases for the patient to recuperate, every member advising immediate operation, and I felt somewhat like a child who has been punished for doing wrong when he really has done no wrong. I feel still very strongly that these extra-uterine cases which are in a condition of extreme shock should be left without operation until they can be brought to a condition where operation is safer. One of these cases I remember very well. She was out in the country and was apparently dying. She was in collapse with no palpable pulse and sweating, and it seemed evident that within a few hours or less she would pass away. I said kind words to the family and took my departure. Two days later she was brought into Springfield in the ambulance. She was in pretty good condition, and recovered from operation perfectly well.

I wish I had heard some years ago what Dr. Polak said about full-term abdominal pregnancies. I think I might have saved a case then.

I have had one case of full-term abdominal pregnancy. In this case drainage was employed, and the placenta left, as it was impossible to remove it. The patient got septic and died.

DR. E. H. STEVENS, Cambridge: From this discussion, it is evident that the experiences of different men vary, and that the treatment varies also. My experience, which has extended over thirty years, is somewhat different from that of Dr. Polak and also different from that of Dr.

Rushmore. At the time I began to operate hospital facilities were not so common as at the present day. Many of my cases were done in private homes and some in cellar kitchens.

I have had seventy-five cases with but one death—that was a woman who was on her way to church and fell on the street. This happened at 9 o'clock in the morning. I saw the case at 2:30 in the afternoon. The patient was pulseless with a greatly-distended abdomen, and a report of having lost ground rapidly since morning. She had the largest amount of blood in the abdominal cavity that I have ever seen. This was before the days of transfusion. Today we would transfuse and probably save such a case. This patient lingered until midnight and died from exhaustion. With transfusion I feel that few women ought to die of tubal pregnancy, if seen in any sort of season. I have always advocated operation as soon as possible after seeing the patient. Many have been pulseless at the time of operation, but have rallied soon after getting them back to bed. I feel that waiting for a patient to recover from shock adds greatly to the danger. I also feel that it adds to the danger to move a pulseless patient from her home to the hospital. It has always been my custom to remove all blood clots. I believe that retention of blood clots greatly increases the danger of sepsis. I have almost invariably noticed one symptom which I feel to be of great diagnostic value, that is, the great desire to evacuate the bowels. A number of my cases have been found at the toilet, where they have fainted.

When it is not feasible to do a blood transfusion, the patient may be greatly benefited by salt solution, either under the breast or into the vein, preferably into the vein. Two liters of salt solution can be given under the breast with very little delay and little preparation. I have seen several unfortunate cases where advice to operate has not been followed.

DR. S. A. MAHONEY, Holyoke: There are just two things I should like to speak of. One is relative to the possibility of an abdominal pregnancy. I have my doubts that it must be always in the tube and never in the peritoneal cavity. I had a patient once from whom, on operating for an ectopic gestation, I took out the tube on one side, leaving the ovary, and on the other side the ovary, leaving the tube. Some two years later I had to re-operate this same patient for another ectopic gestation. In my opinion this ectopic pregnancy was abdominal. The ovum was impregnated between the ovary on one side, and the tube on the other. The entire pathology was in the peritoneal cavity and not connected with the Fallopian tube. My opinion is that an abdominal pregnancy can take place under certain circumstances.

The other point is relative to operating on a

patient in shock due to intra-abdominal hemorrhage from a ruptured ectopic. It is all right to wait if you know how large the bleeding vessels are, and how soon they will stop bleeding. A patient may die from a bleeding varicose vein of the leg. In an ectopic gestation of two or three months, the veins in the pelvis are quite large and bleed very freely. I think no man has the right to wait unless he is absolutely sure how large the bleeding vessel is, and that it is an impossibility. In my opinion, with transfusion and stimulation taking place at the same time with operation, I think more cases will recover than with trusting to luck that the hemorrhage will stop before death occurs. Many cases, of course, die before the surgeon arrives, and also a certain number after his arrival, while pursuing the waiting policy. I think, if I remember correctly, that the story was told about a very prominent patient in Worcester, in connection with Dr. Seelye's paper, where death occurred while waiting for a very prominent Boston surgeon who was to do the operation. I know of no case in which, with proper surroundings, death has occurred on the table or immediately afterwards from a ruptured ectopic gestation. These patients seem to stand operation remarkably well.

DR. C. J. KICKHAM, Boston: We hear much about shock. I would like to bring out that we frequently see little shock with a large amount of hemorrhage. I have seen three cases of that type. One had irregular menstruation; no pain that she remembered. She had a slight fainting spell, but she did not lose consciousness. Pulse normal. Her physician made a diagnosis of extra-uterine pregnancy, and asked me to see the case. Examination showed a definite mass behind the uterus and at operation the whole pelvis was full of free blood.

One other case which we meet and which does not show typical symptoms or history: I saw this case not long ago in consultation. The patient insisted she had not missed any periods, and I questioned her closely on that point. She was in a state of shock with apparent great loss of blood. Her pain was all above the umbilicus and she had vomited about every four hours. Her physician and I went over her and she was tender over the entire upper abdomen; everything pointed to a ruptured gastric ulcer. Operation showed a ruptured extra-uterine with a large amount of free blood. This case had symptoms which would point to anything but an ectopic pregnancy.

DR. J. M. BIRNIE, Springfield: I hesitate very much to differ with Dr. Polak or Dr. Rushmore in cases of extra-uterine pregnancy, but Dr. Polak has told us, and so very clearly, that the danger lies in the cases where the tube is rup-

tured and not in the cases of tubal abortion where the patients will react from the shock.

No one likes to operate in the presence of shock, and yet we are forced to do so in rupture of the uterus, spleen, or liver, and in many other conditions as a life-saving measure. I firmly believe that most of us will get better results from immediate operation. Personally, I cannot tell which cases are going to rally from the shock and which are not, and until I can make this distinction I am going to operate at once.

DR. M. M. BROWN, North Adams: I am in hearty accord with the sentiments of Dr. Mahoney. From observation of over one hundred cases, operated upon at the North Adams and Adams hospitals, with no fatalities, during the past ten years, I have concluded that immediate operation is the proper course to follow in the great majority of cases. The value of the free use of normal saline solutions in these conditions cannot be over-estimated. The fluid content of the blood is thus replaced, and shock materially lessened. This can be given intravenously by an assistant while the necessary operative procedures are being carried out.

DR. POLAK, Brooklyn (closing): I agree with Dr. Rushmore that it is the history that is of the utmost importance in making a diagnosis of ectopic pregnancy. We teach that in every case of uterine bleeding which occurs during the period of sexual maturity that: (1) we must establish the presence or absence of pregnancy, (2) then, whether the pregnancy is intra- or extra-uterine. When it is extra-uterine the symptoms are due to disturbances in the tube without its protective decidua and the adjacent peritoneum, and the pain, cervical sensitiveness, and mass tenderness are all out of proportion to the bimanual findings. It should be an accepted surgical rule that no case suspected of having an ectopic be examined under anesthesia, for such examination gives no information and favors tubal rupture.

Many times, aside from the history of a missed, postponed, or prolonged menstruation, the only symptom complained of is painful defecation. This is usually present in the cases of tubal abortion, slowly bleeding into the cul-de-sac.

Fortunately, both for the patient and the physician, the majority of ectopics terminate in tubal abortion, and again that primary rupture, except in the small interstitial group, is seldom fatal. Therefore, ectopics divide themselves into those seen in the non-tragic stage and those encountered for the first time in the so-called tragic stage—in severe shock with the symptoms of internal hemorrhage. We are all agreed that when the diagnosis is made the tube or the pregnancy should be removed, but we differ as to the time when it is best to operate. No sur-

geon will willingly operate upon a patient in shock—but how long shall we wait? For the bleeding must cease or the vessel be tied if the patient is going to recover from her collapse. Our experience has taught us that if the woman is going to die from shock or hemorrhage, as a result of rupture, she will do so before we can give her surgical aid. On the other hand, the majority of patients react to a greater or less degree under the administration of morphine, in the Trendelenburg posture and with abdominal compression. This sometimes takes an hour, or again twelve or twenty-four hours. Only where there is no reaction, with a falling systolic pressure, ascending pulse, and a continuing fall in the hemoglobin percentage is the immediate operation indicated.

Where a large amount of blood has been lost, blood transfusion should be coincident with the operation.

Dr. Kickham is correct in calling attention to the frequent incidence of epigastric pain in rupture. The pain is referred to this region when rupture occurs into the abdominal cavity, as is the case in other abdominal calamities, but it is not present in intraligamentous ruptures or in tubal abortions.

In closing, I wish again to thank the members of the Section for their kindly criticisms and valued discussion, and to assure you of my appreciation of your invitation to present this subject before you.

## Original Articles

### THE ART AND THE SCIENCE OF MEDICINE

BY DONALD GREGG, M.D., WELLESLEY

THIS is an age-old subject, and worthy of continued discussion because never in history has the relation between the art and the science of medicine been what it is today. Especially, in the last few years has the science of medicine forged ahead and left the art of medicine far behind. Failure to distinguish between art and science has been the cause of strife in this world through many generations. How much suffering this strife has engendered is inestimable.

Art is founded primarily upon the emotions, upon our sensations, our feelings. Science is founded upon matter, the facts and laws pertaining thereto, independent of our emotions or feelings. When we speak of reducing some action to a science, we imply that the possible error arising from our emotions is eliminated. When we think of something artistic, we imply an appeal to our senses, an appeal which arouses our emotions. Art concerns our emotional life

primarily, science involves our intellectual life. An attempt to transfer a subject from the emotional to the intellectual field, or from the intellectual to the emotional field of mental life requires time and effort, and often involves suffering. Take, for example, the realm of religion. Religion is primarily an emotional affair. We feel that there is a God and that there is a future life. If we strive to prove our beliefs we can spend much time and effort and often suffer much. What we can prove intellectually leaves us but atheists, but what we can feel should give us a creed—a belief—sufficient to make us useful and happy. How many a life has boxed the compass of—I believe; I do not believe, because I do not know; I cannot know and yet I believe.

Not only for the individual has there been this struggle between art and science in religion. The Reformation sprang from this contest of belief and knowledge. And today we have a divided Church. At one end of the spectrum, we find almost pure emotionalism, and at the other end an attempt at pure intellectualism, and since religion is primarily emotional, the emotional wing of the Church will always appeal the more strongly to the larger number, especially to children, to the emotionally inclined, and to most of us in time of emotional stress.

Today the practice of medicine is going through its Reformation. Science, gathering knowledge by leaps and bounds with the aid of ever-multiplying instruments, and chemical and biological research, has shattered many a fond theory, especially in therapeutics, and has left behind confusion, disbelief and suffering. New Thought, Christian Science, Couéism, osteopathy, surgery, internal medicine, endocrinology, mental hygiene, social service, and all the medical specialties are floating about in confusion. And in this confusion are involved the medical schools, the medical students, the problems of state medicine, the training of nurses, and last, but by no means least, the general public.

Art, it has been said, concerns the emotions, science concerns matter and the facts and laws pertaining thereto. Science clearly has to do with what we know—with knowledge. All three of these words come from the same root. But what we know, has to do with facts and material things, independent of our feelings. And in the practice of medicine, the science of medicine deals with the organic activities of health and disease, and calls for knowledge of anatomy, pathology, histology, bacteriology, etc., etc.; in fact, with the knowledge, on the teaching of which nearly all the energies of our medical schools are expended.

But where does the art of medicine come in? It doesn't much these days, and that is where the trouble lies. The art of medicine used to play an important part in the work of the doc-

tor, because it used to be thought that the doctor took care of sick people. Now most young doctors take care of diseases and forget that this is not their whole duty. But most sick people, perhaps 60 to 70 per cent., that come to the general practitioners, haven't got definite organic disease that the present graduate of a medical school is trained to care for. They have symptoms and feelings of not being well, fears and mal-adjustments to life and its demands, and they are not content to be told that they have no nephritis, and no endocarditis, and no evidence of bacterial infection. And if the doctor of medicine will do nothing for them, who can blame them for going elsewhere to be relieved of their ill feelings?

In the development of man there came a time when someone learned to use a stone for breaking nuts and a log for prying up a rock too heavy to lift. From this crude use of hammer and lever came our tools and machines. Man, by projecting his strength beyond the field of his own muscular action, could do more than the other beasts. Again, someone else began to use facts independent of his sensations, and here the intellect began to function. Two from six leaves four, whether we think so or the grocer thinks so, whether it is Christmas or the Fourth of July, whether we are sick or well, here or under the sod. This is a conclusion based on an intellectual fact. But the sitting-room may seem overheated because we have just come in from out of doors, or because we have been exercising, or because we have a malarial fever, or because the humidity is high, although the thermometer reads but 58 degrees. This is a conclusion based on our sensations, and may or may not be a fact.

Man in his development has directed his life first by his emotions and later by his intellect, and in childhood, old age, and often in sickness is swayed more by his emotions than by his intellect. And it is but to be expected that the practice of medicine in its development should first have been dominated by an art dealing with the sensations, and later by a science dealing with facts independent of sensations. The development of man's nervous system has been largely that of elaboration and coördination as his environment and life have become more and more elaborate and complex. The first telephone had a single transmitter and receiver, yet by elaboration and coördination we today have an automatic exchange receiving and transmitting thousands of messages, and a board of directors considering the methods of furthering the company's success. Surely, this is an enormous development through elaboration and coördination, but perhaps no more marvelous than the development of the unicellular ovum, absorbing nourishment from the placenta, into the professor considering the problem of relativity.

The art of medicine deals with the feelings; the science of medicine deals with the facts. Fortunately, the pendulum of interest is beginning to swing back a little from the over-emphasis on science, and functional disease is gaining more and more attention. But much remains to be done before the doctor can come into his old position of one who knows how to take care of sick people.

Man's feelings are developed before his knowledge, and the art of medicine was for a long time the largest part of the doctor's work. Then gradually science entered the field and soon began to disprove many of the theories of the old medicine-man. Perhaps it is but natural that as science busily disproved old theories, art should fall into disrepute. But the scientific architect found that in order to make the columns of the Parthenon look straight, they had to be curved. That is, straight columns and columns that seemed to the senses straight were not the same thing. A young doctor soon finds that the effect of a prescription that a patient believes in, and a prescription that a patient is afraid of often produces different results, although the dosage and drug content may be identical. In other words, he finds that the practice of medicine is not merely a science dealing with material things, but is also an art which takes into account the emotions.

In our medical schools, science is supreme. The faculty numbers only scientists, and specialists, and they tend to beget their kind. The general practitioner,—the family doctor,—who comes most closely in contact with functional disease, and knows best the art of medicine, has no place any longer in our medical schools. The medical students emerging year after year from our schools are well trained scientists, skilled in diagnosis, qualified to sign death certificates, and make post-mortem examinations, but woefully weak in caring for the sick and ailing—especially for the functionally sick, who, if long neglected, often become organically ill. These graduates start out often as general practitioners, although they have not seen a general practitioner during their course of study. Functional disease is largely unknown to them, and is regarded as the realm of the charlatan, the Christian Science healer, and not to be touched by a clean-handed man of scientific training. But functional disease crops up at every hand, alone and associated with organic disease. To make the pot boil, the young doctor lowers himself to consider such cases. Perhaps he blunders into difficulty for himself and the cases, and in disgust abandons medicine or returns to teach or study pure science at the medical school, or perhaps he compromises his soul, and keeps the pot boiling to the detriment of his happiness and self-respect. Or, again, perhaps he comes to separate the art from the science, the

functional from the organic, and gains happiness from helping the sick and ailing, though their disease may defy discovery by the anatomist, the bacteriologist, the endocrinologist, chemist, pathologist, orthopedist, orthodontist, pediatricist, geriatrist, aurist, ophthalmologist, roentgenologist, etc., etc.

The State can never make a success of problems centering about the art of medicine. People will ever demand the right to choose their own doctors to care for them. But they will gladly have the State go farther and farther in solving problems centering about the science of medicine,—sanitation, preventive medicine, bacteriological and pathological examinations, x-ray pictures, the preparation of vaccines, serums, etc. And here lies the answer to the question of how far the State should go into the medical field—As far as possible in the science of medicine, but as little as possible in the art.

The training school for nurses that over-stresses the making of tidy beds, the accurate giving of medicines, the super-perfect sterilization of instruments, and forgets to care for the ailments as well as the diseases of its hospital patients, has forgotten that the best nurses are not the pure scientists, but are the women who have added medical knowledge to their medical art of caring for the sick by giving courage and peace and happiness by their common sense, wit, kindness, and sympathy.

And lastly, what of the general public? It seems incredible that the distinction between organic and functional disease is so little understood. But until it is more widely understood, needless suffering will be abundantly present in the community. To care for functional disease as if it were organic, results in aimless medication, useless operations and untold suffering; and to care for organic disease as if it were functional by attempting to still the emotions by prayer or absent treatment, Couéism, or any similar means, results again in untold suffering, and even worse.

To separate the organic from the functional is the first and greatest problem for the practitioner of medicine. Organic disease involving as it does matter, and facts pertaining thereto, is the field for the science of medicine. Functional disease, involving primarily the emotions, is the field for the art of medicine. They usually overlap and are interminably mixed. And he who would practice both the art and the science of medicine must never forget that both organic and functional disease cause real true suffering—suffering that at times is best helped by morphia, and at other times by kindly reassurance, and that to give morphia when reassurance is needed, and reassurance only when morphia is needed, are both malpractice.

## MODERN SURGERY OF THE PROSTATE GLAND\*

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GREAT progress has been made in the surgery of the prostate gland in the past few years. A review of the steps marking progress of surgery of the prostate gland is interesting. The problem of this particular field of surgery is complicated by the fact that all of the patients are men of advanced years.

The discovery of anesthesia and the application of the principles laid down by Lord Lister placed this branch within the limits of surgical aid along the usual lines. It was soon learned that the aged men, most of whom suffered from deficiency in renal power, tolerated ether poorly and various efforts were instituted to avoid the frightful mortality that resulted from this operation under ether.

It was early recognized that those patients who were catheterized over long periods, if they survived, were in better condition for operation when it was finally performed. This knowledge led the progressive urological surgeon to institute some sort of drainage as a routine preliminary to operation. This drainage may take one of three forms:

- (1) Regular catheterization once or twice daily.
- (2) Retained catheter per urethram, or
- (3) Suprapubic drainage under local anesthesia.

Personally, I prefer the latter method because the other two are irritative and annoying to the patients, and we find that even under the most careful precautions the patient will be inflicted with a cystitis either primarily or secondarily as an exacerbation of an already existing infection.

The Urological Department of the New York Hospital is provided with suction in every room, so the patients are kept dry and comfortable by attaching the suction to the inner of a double tube which has been in use for many years. The urine rises in the large outer tube until it reaches the lower end of the small inner tube, which is surrounded by a column of air, and the patient's abdomen is kept dry by this means without sucking the bladder wall into the end of the tube.

The general observations on the improvement in the renal power of patients by drainage was placed on a scientific basis by the development of accurate methods of measuring kidney efficiency. These methods have gradually im-

proved, stimulated no doubt by the epoch-making work of Geraghty and Rountree on phenol-sulphone-phthalein in 1908 (?). Various other tests are in use, including cryoscopy, estimation of output of various substances, such as KI, sodium chloride, and others. The color tests, phenol-sulphone-phthalein and indigo carmine, deservedly occupy the most important place among kidney efficiency tests in the order named. The Mosenthal concentration test is an important recent addition to this list.

Perfection of methods of estimating various retention products in the blood stream of persons suffering from inefficient kidneys is a most important addition to our investigation of the patient, preliminary to operation. By determining this retention, by estimating the excretion of urea in a 24-hour specimen, and by doing a phenol-sulphone-phthalein test, one may get a true picture of the extent to which the kidneys are performing their function as eliminative organs.

The most important part of any operation upon the prostate gland is the preparation of the patient. This preparation consists of drainage by any effective method that is least annoying to the patient.

The patient having been properly prepared, as indicated by his laboratory tests, and as shown by the observing eye of the operator, it is necessary to decide which type of operation one must use. It seems most unwise for the urological surgeon to close his mind to any type of operation. It can be clearly decided by the cystoscope or by digital examination at the preliminary suprapubic cystotomy whether the hypertrophic gland should be removed by the suprapubic route or through the perineum. Unless there is some specific reason for the gland to be removed suprapubically it would seem preferable to perform the perineal operation because, while the latter requires more time and an intimate knowledge of the anatomy of the region, it is not nearly so great a shock to the patient. The reason for the shock accompanying the upper route is that there is always more or less pressure and traumatism to the complicated nervous plexuses over which one must work, thereby exerting an effect similar to a blow over the solar plexus, so familiar to everyone. The downhill drainage, the fact that the patient can be gotten out of bed in a chair after the third or fourth day are additional arguments in favor of the perineal operation of Young and its modifications and the excellent perineal operation of Voelker of Halle and Syms of New York.

Next to the preliminary drainage, the choice of anesthesia assumes a much more important rôle than does the choice of operative routes. Ether is dangerous because it is extremely irritative to the kidneys which, even in the best of

\*Read at the Springfield Academy of Medicine, May 8, 1923.

cases, are already damaged. Chloroform is almost sure death, the patients succumbing in from 6 to 10 days as a result of liver poisoning, as shown by the experiments of George Whipple. Of the inhalation anesthetics, gas oxygen is the most serviceable, but there are very definite objections to it. Under all inhalation anesthetics the blood pressure is elevated very considerably, so that the patient may be likened to an athlete at the height of his activities. This naturally gives rise to more bleeding, and consequently to greater shock.

Many attempts have been made to perform the operation under local or regional anesthesia. Of these methods two have survived, spinal anesthesia as practised by many urologists from time to time in this country, and sacral anesthesia, which has been lately modified by the addition of parasacral injections as well. The number of accidents under spinal anesthesia have been so numerous and so fatal that it has been largely given up by American surgeons. The results with sacral anesthesia have been so spectacular in a recent series of 36 cases that it seems worth while to discuss the method in some detail.

F. Cathelin (Les injections spinales. Paris, Balliere, 1903), and Durant (1902) used sacral anesthesia for the purpose of treating grave neuralgias, sexual neuroses, and incontinence of urine. The former first used plain water, salt solution and later added cocaine, novocaine, codeine or morphine. By this method Cathelin reported 49 per cent. of the cases of incontinence of urine cured; 35 per cent. materially benefited, and 4 per cent. failures. He failed in his attempts to completely anesthetize the sacral nerves in human beings, but was successful in dogs.

A. Löwen (*Zentralbl. f. Chir.*, 1910) used 20-25 c.c of 1½ to 2 per cent. novocaine, and placed the patient in a sitting posture for some minutes after injection, with the idea of retaining the solution in the lower end of the vertebral canal. O. Gros (*München. med. Wchnschr.*, 1910) recommended the addition of sodium bicarbonate which, he states, permits the solution to readily penetrate the nerve sheaths. Strauss prepares a solution by the addition of sodium sulphate which, he maintains, prevents the decomposition of adrenalin, which he also uses. Hertzler recommends the uses of quinine and urea, using 60-90 c.c of 6/10 per cent. solution. Lewis, B., and Bartles, L. (*Surgery, Gynec. and Obstet.*, 1916) reported 48 successful cystoscopies out of 68 attempted, and D. R. Pickens (*Jour. Tenn. Med. Assn.*, 1916) reported 81 out of 100 attempted. Splendid work on this subject has been done by Thompson of Galveston, who follows the method described by M. L. Harris (Tr. Amer. Surg. Assn., 1917). Albert J. Scholl, Jr. (*Jour. of Urology*, Aug., 1921) used

sacral anesthesia successfully in 140 cystoscopies out of 150 in which it was used.

The patients upon whom this type of anesthesia was first used by us were all cases in extremely grave condition. They will be mentioned in detail later. In the last series all operations in which the anesthesia was applicable were done under sacral. This includes operations upon the prostate, seminal vesicles, and urethra. In operations within the scrotum the sacral must be reinforced by blocking off the cord as it emerges from the inguinal canal.

#### METHOD OF ADMINISTRATION

The following is the routine procedure which we have developed, and attempts to deviate from it have caused unsatisfactory results in some way or other.

The patient is prepared for operation in the usual manner as regards purgation, enemas, etc. One hour before going to the operating room an opium suppository, gr. i, is inserted into the rectum. Just as he starts for the operation room he is given a hypo of .5 min. of Magendie's solution. Upon arrival he is placed upon his elbows and knees, or upon his abdomen on the table. The skin is then infiltrated at the point where the needle is to be inserted, first having been sterilized in the usual manner.

The operator then palpates the coccyx, and sliding his finger above this bone, reaches the lower part of the sacrum, and is usually able to palpate the sacral hiatus without difficulty. The sacral horns adorn the lateral borders of a triangle of which the hiatus is the apex. A six-inch needle is inserted through the anesthetized skin and into the sacral canal by puncturing the ligament which covers its lower end. After penetrating this ligament, the needle is easily pushed in 1½ to 2 inches. It has to be guided carefully, otherwise it will impinge on bone, and must of course be deflected. One learns to tell by the ease with which the needle passes, and the direction it takes, whether it is in the canal. One of the directions the needle may take is just over and to one side of the roof of the canal. This error is detected by the direction of the needle and the fact that it passes with difficulty. One can also check up on this position by the fact that as soon as the injection is started the tissue at the end of the needle will infiltrate with the solution if it is not in the canal. The sacrum has a great many variations in different individuals, and careful observation of the osteology as well as the course of the nerves is a necessary preliminary study.

The needle having been inserted into the canal, one observes its end carefully to see whether either blood or spinal fluid runs out. In the event of this complication the needle is withdrawn to a point where it ceases to appear and the injection made. If the solution runs in

easily one is sure that he is in the canal. If, however, the injection is made with difficulty, one is quite sure that the needle is not in the canal, and the tissues over the sacrum are observed for infiltration.

We have been using 30 c.c. of freshly prepared 2 per cent. novocaine solution injected into the canal without the addition of sodium bicarbonate solution.

After the injection into the canal, which is extradural and which presumably elevates the dura from the bone under the pressure used (and in this procedure one may safely use a quantity up to 60 c.c., provided the solution is not toxic), we inject 1 per cent. solution of novocaine into the first, second, and third sacral foramina on each side in accordance with the method of Labat. These are usually located rather easily by passing the needle into the depression just below the transverse processes, and by pointing it mesially and slightly upward, one's needle usually enters without great difficulty. From 5 to 10 c.c. of 1 per cent. novocaine solution is injected into each foramen.

The patient is then placed on his back and 20 minutes by the clock is allowed to elapse before the operation is begun. By this time that part of the patient which sits on the saddle, including the scrotum, urethra and bladder, will be thoroughly anesthetized if the injection is successful.

We have found that by starting to operate too soon the patient will often feel pain, and this produces such an apprehensive state of mind that every moment will cause complaint; while, if one waits until a thorough anesthesia occurs, the patient goes through without a protest.

All cases have been entirely successful except three. In one of the latter, viz., a case of seminal vesiculectomy, it was necessary to give a few whiffs of ether during the last five minutes of the operation. In another, that of a man 86 years of age, upon whom a perineal prostatectomy was performed, a little gas or ether should have been used for about the same length of time. The third case was only moderately uncomfortable, and when asked after the operation whether we hurt him very badly, he stated, "not so bad." In the case of excision of the hydrocele sac the cord had to be blocked off with novocaine as it emerged from the external ring, as the skin of the scrotum was only anesthetized by the sacral and parasacral anesthesia.

#### UNTOWARD SYMPTOMS

Two cases have had short periods of excitement. One had spasmodic contractions of the legs lasting about one minute. Two others became flushed and somewhat confused temporarily. Most of the cases have an increase in

pulse rate and slight increase in blood pressure which lasts throughout the operation. The untoward symptoms in our cases appeared immediately after the injection was given into the sacral canal, and caffeine is always held ready for use in case a collapse occurs. E. Zweifel (*München. med. Wchnschr.*, 1920) reported a death from cardiac and respiratory paralysis due to the injection of 0.8 gram of novocaine into the dural space. His needle had penetrated the dural sac. B. Kronig (*Operative Gynakologie*, Leipzig, 1912) reported a case in which the novocaine was injected into a sacral vein. This was followed by a partial respiratory paralysis.

#### POSTOPERATIVE COURSE

We have not yet had a death in any of our cases. In the first series were two cases that could not have been operated upon except by means of sacral anesthesia, as they were in no condition to withstand inhalation anesthesia of any sort. In the last series of thirty patients there is one such case. We have felt for some time that blood pressure observations were much more important in the postoperative tests than any other feature of the immediate recovery. It has been a surprise and delight to observe this series of cases. In none of the second series has the blood pressure dropped below 100 mm. Hg., and all of them have shown a tendency to rise at the danger period, about six hours after the operation. We have not found it necessary in any of these cases thus far to give stimulation to the circulatory system either by means of drugs, intravenous infusion of gum-glucose or any other substance.

The general appearance of the patients on the day following operation by this method is surprisingly good, and it would seem that the shock to the entire body mechanism is very considerably reduced by avoiding inhalation anesthesia. There have been no late developments, such as headache, paralysis or other alarming effects. Thus far our patients seem to improve from the zero postoperative hours 6-10 after operation without interruption.

#### POSTOPERATIVE CARE

The postoperative care of the prostatectomy patient must be handled and watched over as carefully as any baby. The patient operated upon under sacral anesthesia may take fluids without becoming nauseated, not only immediately after operation, but during the operation as well. After the operation is over he should be allowed to rest quietly in bed, which he will do in almost 100 per cent. of the cases, because he remains somewhat under the influence of the narcotics and anesthesia for hours. He should be disturbed only to administer fluids and to take the blood pressure.

If the blood pressure drops unduly and does not rise (premonitory symptoms of shock) gum-glucose solution may be administered after the method described by us in 1921. Transfusion of properly tested blood may be administered in extreme cases. In case the bleeding has stopped, the packing is removed from the prostatic capsule in 24 hours, the tube is removed from the bladder the third day, and the patient permitted to sit up in a chair the fourth day. Man is unquestionably an upright animal, and apparently all bodily organs functionate better with the patient sitting in a chair than when he remains in bed. The patient receives a remarkable psychological boost when his feet touch the floor, and one cannot help but be impressed by the fact that improvement is marked after he is allowed out of bed.

Upon reviewing the results of operations upon the prostate, one is forcibly impressed by the fact that age is no contraindication to operation whatever. In our entire series of cases there were 12 men over 80 years of age, all of whom lived for varying lengths of time or are still alive after prostatectomy. Those who succumbed all died of some other cause in no way connected with the operation.

Almost every case that recovers from a perineal prostatectomy is able to return to his customary duties. Provided both sphincters are not lacerated beyond repair, there is never a resulting incontinence; apparently either sphincter may be totally obliterated, provided the other remains intact, without incontinence. Persistent fistula never results if the perineum is reconstructed by one stitch drawing the two parts of the levator ani together. Frequently, patients whose prostates have been removed are able to enjoy sexual intercourse. Occasionally the ejaculated mass goes back into the bladder instead of being projected from the urethra. The bladder, usually infected before operation, almost always afterwards will clear up under appropriate treatment, provided the operation has been successful and there is no residual urine.

#### CONCLUSION

In conclusion, it is appropriate to state that the most important thing about an operation for the removal of an enlarged prostate is the preoperative preparation, which is summed up in the one word, "drainage." Next in importance is the choice of anesthetic. This should not be an inhalation anesthesia if it is possible to avoid it. The least important phase of the event is the route of operation which, in the opinion of the author, should not be the suprapubic route unless it is specifically indicated.

## Medical Progress

### PROGRESS IN DERMATOLOGY

BY HARVEY P. TOWLE, M.D., BOSTON

IN view of the widespread advertising campaign which is being conducted in both lay and medical press extolling the virtues of yeast as a cure for acne, furuncles, etc., the conclusions of the Council of Pharmacy and Chemistry of the American Medical Association convey an important message. After searching investigation, the Council reports (*J. A. M. A.*, May 12, 1923, p. 1398) that "(3)—the supposed beneficial effect of yeast administration on furuncles, acne, etc., lacks substantiating evidence." Commenting on advertisements to the laity the Council quotes "For pimples and boils eat 1 to 3 cakes of . . . yeast a day" and comments in this wise—"A patient who treats himself for boils in this manner may later die of a carbuncle."

At the last meeting of the American Dermatological Association, in June, 1923, many speakers derided the diagnosis, eczema, as meaningless, a hodge-podge, and demanded that the term should be dropped unless it could be given greater definition. At present, it was claimed by some, the diagnosis is made to cover every and any disease of the skin which itches and is red.

Protein sensitization as a cause of eczema continues to occupy the attention of many. The results of their investigations vary less widely than do the interpretations of the results.

At the Massachusetts General Hospital the cases of *Infantile Eczema* have been treated conjointly by the dermatologic and pediatric departments (with success). Dr. O'Keefe analyzed the cases (*J. A. M. A.*, Feb. 18, 1922): 20 per cent. had fat indigestion; 10 per cent. had carbohydrate; 35 per cent. of the bottle-fed and older children showed sensitization to one or more food proteins. Of the breast-fed children, 60 per cent. showed sensitization to such food as eggs, cow's milk, oats and wheat. Dr. O'Keefe therefore infers that sensitization occurs in these children by way of the mother's milk.

Dr. Charles J. White (*Arch. Derm. and Syph.*, Jan., 1923, p. 50) is a strong advocate of such team work between the dermatologist and the pediatricist as Dr. O'Keefe describes. He protests vigorously against the tendency to abandon the stool examination. In obstinate cases of infantile eczema, Dr. White believes that the coöperation of the dermatologist and the pediatricist is essential to success, the one to direct the local treatment, the other to examine the stools and, by his findings, to direct the diet.

In contrast is Dr. Gerstley's article on "Dietary Considerations in Infantile Eczema" (*J. A.*

M. A., April 21, 1923). "Whereas," says Dr. Gerstley, "the trend in the treatment of infantile eczema has been to reduce the diet in one way or another, after eight years' study I am inclined to do the opposite." He is not convinced that there is any deep underlying constitutional anomaly. "Diet affects eczema in two ways, but it must be emphasized that this influence is purely secondary." To him the whole problem is one of nutrition. A well-nourished body means a well-nourished skin: that is, a skin which will possess the power to recover. The treatment of the primary eczema is a purely dermatological problem. Put the child in good physical condition and the local treatment will be effective. Diet, *per se*, will not affect the primary condition, the eczema.

Dr. O'Keefe does not claim that all cases of infantile eczema are due to protein sensitization. Not so Dr. Shannon (*Am. J. Dis. Child.*, May, 1922), who from eight cases draws some very sweeping conclusions. He claims that eczema in breast-fed babies is caused by sensitization through the breast milk in the majority of cases; that removal of these proteins from the mother's milk usually results in cure; that the cutaneous reaction indicates the cause; and that repeated exacerbations and failures to cure are due to lack of cooperation on the part of the mother, such multiple sensitization that it is impossible to limit the diet sufficiently, failure on the part of the physician to test all foods, errors in the testing or the acquisition on the part of the patient of new sensitizations.

Jaeger and Copelli approached the problem of the *Nature of Eczema* from another side. Jaeger (*Ann. de Derm. et Syph.*, Jan. and Feb., 1923) tested the skins of 77 eczematous patients and of 140 normal controls with ordinarily harmless solutions of formaldehyde, turpentine and arnica. He concluded that there seemed to be a definite hypersensitiveness of the eczematous skins to certain substances, the epidermal cells apparently being at fault and the condition being acquired or congenital.

Copelli (Proc. Seventeenth Meeting, Ital. Derm., 1921, Abstr. *Arch. Derm. and Syph.*) found a marked diminution in the coagulability of the blood in eczema. He claims that, working on that basis, he has cured many patients with enemata of gelatin, 50 gm.; calcium chloride, 10 gm.; laudanum, 2 gm.; and water, 700 c.c.

We have known for generations that sunlight affects the human organism. Indeed, we have records extending as far back as the time of Herodotus of the use of sunlight as a method of cure for various ills. It was Finsen, however, who first put light therapy on a modern, scientific basis. It was his studies of light which finally gave rise to Rollier's heliotherapeutic method of treatment in tuberculous affections.

A little later von Tappeiner worked out the theory of fluorescence in the body cells and demonstrated the activity of such fluorescent substances as eosin, fluorescein, quinine and methylene blue in the body. Still more recently it has been demonstrated that there exists in the human body, under certain conditions not yet understood, a photodynamic substance called hematoporphyrin. Subjects in whom this substance exists are found to be peculiarly susceptible to the sun's rays.

These facts have stimulated study anew of such mysterious diseases as pellagra and hydroa vacciniforme. Jobling and Arnold (*J. A. M. A.*, Feb. 10, 1923) felt that none of the theories evolved to explain pellagra were thoroughly satisfactory. It struck them as curious that so little work had been done on the relationship of light to the disease. They argued that as pellagrins are known to be peculiarly susceptible to sunlight and, secondly, as von Tappeiner has shown, fluorescent organisms exist, it was possible that some such fluorescent organism might exist in pellagra. Accordingly they spent the summers of 1921 and 1922 working on this hypothesis. They isolated strains of fungi-producing fluorescent substances from the feces of five of nine acute cases of pellagra, of one out of six subacute cases, and of two out of twenty-three so-called chronic cases.

Duke's case of "Urticaria Caused by Light" (*J. A. M. A.*, June 23, 1923) belongs rather in the class with hydroa vacciniforme than with pellagra. Duke's patient was a woman who for four years had noticed that her skin was extraordinarily susceptible to sunlight. With each succeeding year the susceptibility had increased progressively, until she no longer dared expose herself for even a few minutes without the heaviest of coverings. Curiously those regions covered by the clothing were more susceptible than the face or hands. Erythema and vesicles with wheal formations, and, occasionally, constitutional symptoms followed exposure promptly. Duke experimentally exposed certain parts through patterns cut in cardboard. In two and one-half minutes a typical wheal developed, exactly covering the exposed pattern but showing no tendency to spread beyond the limits of the open pattern. On the face, neck, arms and hand isolated wheals developed first, which in time spread and coalesced. Duke could find no hematoporphyrin in the urine.

Much interest is being shown both at home and abroad in the use of convalescent serum as a means of checking the spread of measles in institutions and communities. Schilling (*Klin. Wchnsch.*, Dec. 9, 1922) made quite an extensive series of investigations. His serum was derived from the blood of two patients. Blood was taken from the first six days after the cessation of fever and from the second dur-

ing the height of the fever. These sera were not mixed but were kept separate and were used independently in two series of studies.

He inoculated in the two series a total of 43 children varying in age from 6 months to 7 years. Each child received from 2.5 to 3 c.c. of serum.

Twenty-five children were inoculated with the first serum. Four children were discovered to have been infected before the inoculation. Of the 21 remaining, 19 were fully protected; 2 developed very mild cases with no complications.

Eighteen children were injected with the second serum. Eighteen remained well. Five developed the disease, one the next day. One of the five was partially protected. In three the disease ran the usual course.

Lacking further serum from convalescents, he tried serum from cantharides blisters, but found it useless.

Serum taken from adults who had had measles in childhood was injected into 10 children. Five received full protection. Five had much modified cases.

Caseosan protected 7 out of 10 children. One case was abortive. Two were modified.

It would seem to follow from these results that the serum must be taken and given at the right time.

Blackfan, Peterson and Conroy (*Ohio State Med. J.*, Feb., 1923) testify as to the value of convalescent serum as a prophylactic measure in measles and chicken-pox. They consider that it does confer an efficient temporary immunity when injected soon after exposure.

The differential diagnosis between measles, German measles and scarlet fever and the Fourth Disease is notoriously difficult. Raven (*Lancet*, May 12, 1923) gives a clear-cut account of an epidemic of fourth disease in a school for girls. Twelve cases occurred in a population of 80. The onset of the disease symptoms was sudden. The fever ranged from 102 to 104. On the first day a scarlatiniform rash appeared all over the body and legs, scarcely affecting the face. Irritation was a constant symptom. The pulse rose only when the temperature was high. The palate and fauces were injected. The fever lasted from seven to ten days. About the fourth day the tongue peeled. The glands were not much enlarged at first. In four cases there was secondary enlargement, with pain. Desquamation began on the fifth to seventh day on the ears, neck and body, but bore no relationship to the intensity of the rash. None of the patients were ill or toxic.

Volumes have been written about pruritus ani and its treatment. In 1921 Winfield isolated from 50 cases sometimes the streptococcus fecalis, sometimes the colon bacillus, sometimes both. With stock vaccines of the colon bacillus and

autogenous vaccines of the streptococcus he reported an astonishingly large percentage of cures.

At about the same time Murray reported that in cases of pruritus ani the opsonic index was low for the streptococcus fecalis. He found that when the index was raised by vaccines the itching was relieved in like proportion to the rise in the index.

Knowles and Corson have recently reported a series of cases treated by vaccines without local therapy (*Arch. Derm. and Syph.*, April, 1923). Their results were equally as good as those of Winfield and Murray.

Pemphigus is a very grave disease whose etiology and treatment have long baffled research workers. Various theories have existed as to its origin, neuritic, metabolic, parasitic, bacterial. None have received sufficient support to be universally accepted. Therefore it is with much interest that we receive Eberson's report from the Mayo Clinic of his study of seven cases (*Arch. Derm. and Syph.*, Aug., 1923). Five of the cases were undoubted. Two were probably chronic pemphigus. Four cases of the series were of the malignant type. From every case Eberson repeatedly recovered a gram positive organism which was morphologically, culturally and immunologically always the same. The organism was anaerobic, non-motile, ovoid or coccoid, resembling a strepto-bacillus in certain aspects. It was pathogenic for guinea-pigs and rabbits and possessed definite toxic properties. It was not found in normal persons nor in those with other skin diseases. It has been recovered from the blood of injected animals. Eberson has named the organism, provisionally, *Bacterium pemphigi*.

Vegni (*Riforma med.*, March, 1922, Abstr. *Arch. Derm. and Syph.*, Sept., 1922) reported that he had succeeded in inoculating the cornea of rabbits with serum taken from the vesicles of herpes labialis. Moreover, he was able to transfer the infection from one rabbit to another indefinitely. Eighty-three per cent. of the animals inoculated died of encephalitis. Brain material from such rabbits when inoculated into the cornea of other rabbits successfully reproduced the herpetic disease. Animals which survived inoculation were immune to further inoculations. The virus is filterable and is destroyed by heat at 50° C.

From time to time reports have appeared of cases which clinically were typical of herpes zoster but which seem to have given rise to eruptions in others exposed, which were typical varicella. Paranoungian and Goodman (*Arch. Derm. and Syph.*, April, 1923) report a case in which there was a well-marked zoster over the right abdominal region and in addition a generalized eruption which simulated varicella very closely. They finally decided that the case

was not one of mixed zoster and varicella but of generalized zoster. Reviewing the literature, they divided the cases reported into four groups: 1—Zoster in one patient followed by varicella in another exposed; 2—zoster followed by varicella in the same patient but not in others exposed; 3—zoster and varicella in one patient followed by varicella in another; 4—varicella followed by zoster in others exposed.

McClean reports a case belonging to the first group (*Lancet*, Feb. 10, 1923). A man of 46 was admitted to the hospital with a well-marked herpes of the face and a vesicular eruption of the trunk. Eighteen days later three of his children came down with varicella.

Our conception of lupus erythematosus is gradually undergoing change. Two types have long been recognized: the chronic, fixed type, and the rarer, acute, disseminated type. There has been much discussion concerning the etiology of these two types, but no acceptable theory has been evolved.

Goeckerman has recently published a paper on "Lupus Erythematosus as a Systemic Disease" (*J. A. M. A.*, Feb. 24, 1923), which interests the surgeon and the internist as well as the dermatologist. Goeckerman asserts that the acute type of lupus erythematosus is a systemic disease in which tuberculosis is always associated, though not always recognized. One of the most striking and startling features of these cases is that the patient is so sensitive to surgical trauma that even so slight an operation as the extraction of a tooth may be, and sometimes is, followed by alarming systemic symptoms and death. Goeckerman warns against any avoidable surgical operation.

Three of his cases came to autopsy. In all evidences of tuberculosis were found which had escaped the most careful ante-mortem search.

The prognosis of this disease is always very grave. Because of the character of the constitutional symptoms errors in diagnosis are frequent. Erysipelas, pellagra, cholecystitis, gastric ulcer, chronic appendicitis, typhoid have all been wrongly diagnosed. The cheek lies in the careful consideration of the skin symptoms.

Raynaud's disease is notoriously intractable to treatment. If Klecan's observation should be substantiated we shall have at last a method of treatment which offers some hope. Klecan reports a case (*Endocrinology*, Jan., 1923) in which two fingers had progressed to actual necrosis and in which the pain was so severe as to require morphia. Under the administration of the anterior pituitary substance, two grains three times a day, with later one-fourth grain of desiccated thyroid added, the patient was restored to perfect health in three months.

We are all familiar with x-ray cancer. MacNeal and Willis (*J. A. M. A.*, Feb. 17, 1923) convey a warning to radium workers in their

report of the personal experience of one of them who had handled much radium without always exercising due precaution. Changes occurred in the fingers which were demonstrated, under the microscope, to be cancer. The reporters "are strongly inclined to the opinion that radium may, when the exposure has been sufficient, give rise to changes in the skin predisposing to the development of malignant new growth much in the same way as Roentgen rays are now generally known to do, and that radium has had precisely this effect in the instance before us."

Lambert (*J. A. M. A.*, April 17, 1923) believes that the danger of Oriental Sore becoming implanted in this country is very real, for which reason he thinks a more widespread knowledge of the disease is important.

He reports two cases, both in newly arrived immigrants. In one the sore developed after arrival in this country, eight months after exposure. In the other, the sore was in the healing stage on arrival and escaped recognition by the quarantine officer. The incubation period of the first was unusually prolonged, as usually the disease develops in from one to eight weeks after exposure. The sore affects particularly the exposed parts, the face, the hands, the feet. A "pimple" develops at the site of inoculation, which grows steadily and finally ulcerates. Healing is by scar formation in from six to eighteen months.

As to treatment, Lambert says that surgical excision is not very successful unless done in the early stages of the disease. Tartar emetic, given intravenously, is practically a specific. Roentgen therapy is successful, as is also, in the early stages, refrigeration.

Hoesch reports two cases of necrotizing erysipelas (*Munch. Med. Wchnsch.*, March 23, 1923). Both cases spread over the head and the trunk to and even below the hips. As the disease spread, large areas of necrosis developed which destroyed everything deep into the tissues.

Brams and Pilot have done some excellent work in "Erosive and Gangrenous Balanitis" (*Arch. Derm. and Syph.*, April, 1923). They report four cases in which the symptoms were the same in all. Constitutionally, there were malaise, fever, and headache. Locally, there was swelling and discoloration of the penis, with eroded and gangrenous ulcerations and a foul, purulent discharge. The symptoms developed rapidly, often reaching their height in 72 hours. Treatment consisted of thorough cleansing with permanganate or hydrogen peroxide. Although it is not an operation ordinarily to be recommended, in two cases they were forced to make dorsal slits because of phimosis in the one and of paraphimosis in the other.

Bacteriologically, they found in every case fusiform bacilli, spirochete and staphylococcus

albus, yet in no case could they find the least evidence of "saliva contact."

Because this form of balanitis is supposed to be invariably due to infection by "saliva contact" and because they found the evidence of such contact lacking, they examined cultures and smears from 100 normal men. In 51 per cent. they recovered both fusiform bacillus and spirochete. In the aerobic cultures the staphylococcus was found in association with them in 90 per cent. They call especial attention to the fact that the same association exists normally about the teeth and tonsils. They also call attention to the similarity of the bacterial flora in the normal preputial sac and in the purulent secretions of balanitis.

They concluded that their work indicated that "saliva contact" was not an essential predisposing factor but that "the infection may be due to organisms which are present as saprophytes under normal conditions and which have the power of becoming pathogenic under suitable conditions."

Ford (*Lancet*, May 19, 1923) offers a new treatment for chronic ulcerations of the lower extremities. In like cases Leriche practiced sympathectomy by means of an incision in the walls of the femoral artery on the theory that the ensuing paralysis of the vaso-constrictor fibers would produce an arterial dilatation and consequently a greater supply of blood to the ulcerated part.

Ford injected the walls of the femoral artery with a 5 per cent. solution of eucaïne at one point in each quadrant of the circumference of the artery. He says the result was surprising in the rapidity with which the ulcers healed.

chemical plants was due, first, to the monopoly which she possessed in this branch of industry, and second, to the highly developed organization known as the Interessens Gemeinschaft.

The author, after showing what has already happened, points out that the same supremacy in chemical warfare will continue in the future unless definite steps are taken to prevent it. Chemical attack and defense will be necessary features in the conduct of future campaigns. This method of warfare is not as inhumane as is often imagined, provided both sides are equipped for it. In fact, more important strategic results can be obtained with much fewer permanent casualties than when explosives are relied upon. It is possible, Lefebure believes, that chemicals may be developed which will act simply through the power of causing temporary incapacity.

His answer to the problem is to limit the chemical plants of Germany to an output great enough to supply the needs for dyes and fertilizers, but no greater, and to offset this by the development in other countries of similar factories, so that each nation may be prepared to supply its own chemicals in case of need.

The experiences of Major Lefebure with a combatant gas unit on the British front, then as Liaison Officer with France and other allies on Chemical Warfare, and later as assistant to Lord Moulton on chemical questions in relation to the Treaty, entitle him to a hearing on this most important subject. His views, backed up as they are by Marshal Foch and Field Marshal Wilson, must be regarded as correct.

## Book Reviews

*The Riddle of the Rhine.* By VICTOR LEFEBURE, with a Preface by Marshal Foch and an Introduction by Field Marshal Sir Henry Wilson. New York: E. P. Dutton & Co. 274 pages.

Major Lefebure has given, in this book, an interesting though relatively brief history of the development of chemical warfare in the World War. He describes the different types of chemicals employed, and outlines the manner of their employment by the opposing armies. The struggle for chemical supremacy was concerned chiefly with production. The ease and rapidity with which Germany turned from the production of dyes, fertilizers, and other chemicals useful in peace, to the production of munitions and chemicals used in warfare, was a tremendous advantage to her. This transformation of her

*Chronologia Medica.* By SIR D'ARCY POWER AND C. J. S. THOMPSON. New York: Paul Hoeber. 278 pages; numerous illustrations. Price, \$3.50.

This "Handlist of Persons, Periods, and Events in the History of Medicine" is a very valuable little book for reference. It consists of brief paragraphs giving the position and chief accomplishments of the outstanding physicians and scientists whose work contributed to medicine. There are small portraits of the more important individuals. The list ends with men in the generation born in the 70's of the last century. The dates of important discoveries cease with Schaudinn's discovery of the parasite of syphilis in 1905.

Following the bibliographical part is a list of drugs and remedial agents with the dates of their discovery, and a list of the principal universities and schools of medicine and the approximate dates of their foundations.

There is appended a list of the chief works on the history of medicine.

## THE BOSTON Medical and Surgical Journal

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### FEES

THE determination of the fee to be asked for professional services appears to be a most erratic mental process. The same operation performed by equally competent men in San Francisco, Chicago, New York, and Boston would in all probability have widely varying financial values attached to it in each of these cities. Even in the same city, there are great discrepancies between the fees charged under similar circumstances by two equally skillful men.

It is unfortunate that this is so, for the public would accept its bills with much better grace if it knew what to expect, and the doctor would feel more justified in his charge and less like an adventurer if he were conscious that his patient knew what was coming. Unhappily for the confidence of the public in its medical advisers, the rumor of an unusually large fee sets afoot the accusation that the practice of medicine is becoming tainted with commercialism, and that its practitioners are akin to highwaymen.

Large fees are occasionally quite justifiable, and when properly made are not usually the cause of gossip. At times some patient, through ignorance or penuriousness, objects strenuously

to a perfectly just bill, and by his talk makes it very unpleasant for his medical attendant. We wish that such people could always be treated in the way that a well-known obstetrician of Boston treated an objector of his. He simply wrote "Received payment in full" across the face of the bill, and sent it to the patient. We have never heard the outcome of this magnificent gesture, but even if the obstetrician lost his fee, his spiritual reward must have been ample.

But what, after all, is at the basis of the physician's fee? There must be some economic principle applicable to its determination. Undoubtedly the law of supply and demand operates to some extent, although we may be unaware of it. If there were but one surgeon in a city of 100,000 people, he would be able to get more for his services than if he had a competitor. Whether he would take advantage of this situation to the fullest extent, we very much doubt. The most successful physicians as a rule continue to give their services to the poor, long after their prominence has enabled them to make large charges. We do not mean to imply that medical men are different from other human beings in their fundamental springs of action, but we do believe that they care less for money, and more for the actual employment of their skill than the vast majority of their fellow-men.

Their standards of living are rather high compared with those of the community in which they live. They work hard and appreciate comfort when the day's work is done. Many of them are keen sportsmen. Their training has all been away from care in the expenditure of money.

To live a life based upon these standards, with no power to earn anything much before 30, and with his earning capacity slowly increasing to a maximum at 50 or 55, a medical man during his most active years must necessarily receive an income which is definitely greater than that of the salaried employee. If he could not expect this, he would not enter medicine. Hence the law of supply and demand makes it imperative that the practitioner of medicine should receive a higher recompense than the average man in his community. The years of preparation and the constant sense of personal responsibility must be compensated.

The upper limit of the physician's income, on the other hand, is limited by the fact that he must earn whatever he gets. There is no "unearned increment" for him—no placing of a hundred dollars in some little manufacturing concern, to draw out thousands later on. When the doctor invests, he usually reverses this process, and is often fortunate if he recovers any of his investment.

We see, then, that there is a certain limit below which the income of an established professional man cannot fall, and another beyond which it will seldom rise. These limits vary in

different sections of the country, and vary among cities, towns, and villages.

In any one community, there is no reason why two men of approximately equal ability should receive markedly different returns for the same work, except that one is shrewder at a bargain than the other, or is less considerate of the financial circumstances of the patient. Much of the variation in fees is due to ignorance as to what the other men are charging. This leads us to the belief that, since there is no good reason why charges should vary as much as they do, the formulation in each community of a fee-table would be helpful in adjusting these differences. Such a fee-table should take into consideration the varying ability of patients to pay; it would frequently have to be abandoned, especially as to the lower limits, but it would serve as a guide to the physician and a safeguard for the patient against the occasional over-charge.

No one can force a medical man to sell his services for a given amount. If he intends to charge more than the fee-table allows, he should so inform his patients beforehand, as set forth in Section VI of the Code of Ethics of the Massachusetts Medical Society. If he says nothing, the patient may assume that the charge will be within the accepted limits.

The JOURNAL places this subject before its readers with modesty and considerable distrust in its ability to present the question adequately. We believe strongly that, at the present moment of our national life, while standards of living are changing, and the dollar seems dominant, the medical profession should do everything in its power to present to the public the salutary idea of cool scientific knowledge, applied humanely and for a just remuneration.

#### BOSTON PSYCHOPATHIC HOSPITAL

From the attitude not infrequently shown by physicians and others it is evident that some misunderstanding exists in regard to the special functions of the Out-Patient Department of the Boston Psychopathic Hospital.

In spite of ten years' service to the medical profession and public, covering a wide field, it is still assumed by many that only patients with definite mental disorders are received. It is the desire of the Department of Mental Diseases to extend the usefulness of the clinic by making clear the type of work which is being carried on. The Out-Patient Department is located in a separate wing of the Psychopathic Hospital and is open every week day morning from 9 to 1. New patients are received up to 10:30. There is a permanent medical staff aided by volunteer physicians. Social service and psychological departments supplement the distinctly medical work.

The purposes of the clinic are twofold: first

to act in a consulting capacity; and second, to undertake medical and social therapy for those types of nervous and mental disorder in which institutional care is not indicated. In its consulting capacity, patients referred by physicians or social agencies are welcomed, when for financial reasons or on account of the nature of the problem, the employment of a private consultant is impractical. Such of the resources of the medical, psychological and social service departments as may be indicated are applied to the case. Written reports with recommendations are made out if requested. When there is obscurity concerning diagnosis or appropriate disposition, patients may be recommended to the House in order that more intensive study can be made. Mental cases where extended hospital care is clearly desirable are referred back to the family physician with recommendation to commit directly to the appropriate institution. If the condition is urgent, temporary care can be given until other arrangements are made.

The committable cases of mental disorder make up but a small part of the Out-Patient clientele. The majority of its patients are included in one of three groups: first, the so-called psychoneuroses; second, neurotic or backward children having difficulty in home or school adjustments; and third, cases of delinquency and other conduct disorders, the greater number of which are in the period of childhood or adolescence.

In treatment, concentration is directed to psychotherapy and social therapy, the latter dealing with the environmental factors of home, school, community, and occupation. Patients with organic nervous disorders, or whose nervous symptoms seem due to other somatic disease, are, for the most part, referred to other general hospitals.

There is need for further development of resources for dealing with the minor types of functional nervous disorder and personality inadequacy. For individuals with definite physical illness and for those who are classed with the insane, facilities for cure and treatment are not difficult to find. It is another story for the sufferers from obscure nervous maladies, the "neurasthenic" and "psychasthenic," and for those cases of personality disorder which are equally potent in interfering with ordinary social adjustments. Therefore, it is in these groups particularly that the plea is made for wider use of the resources of the Hospital. No more stigma should attach to consulting the Out-Patient Department than to consulting any neuro-psychiatrist in his private office. The general medical profession can do much to disabuse the public mind of prejudices against the Psychopathic Hospital gained from sensational newspaper accounts of occasional police commitments, which at present furnish the chief source of publicity.

### WILLIAM M. ROBB

THIS man has achieved unenviable notoriety and according to the daily papers is in jail, held on a serious charge.

The question has been raised as to why he was permitted to practice in Massachusetts after having been adjudged guilty of an illegal act in New Hampshire.

He graduated from the Baltimore Medical College in 1897 and was registered in Massachusetts in 1899. At the time of his registration in this State he stated that he had been in practice in New Hampshire. There is no record of his having practiced in Massachusetts until 1917. At or about this time (1917) he was before the courts in New Hampshire on a charge of having performed an illegal operation. He changed his plea of "Not guilty" to "Guilty" and, according to a report submitted by the Registration Board of New Hampshire, was fined one hundred dollars and the condition imposed that he should leave the State.

The New Hampshire Board considered the advisability of revoking his registration but upon the advice of the Attorney General refrained from so doing if he would leave the State.

Having already secured registration in Massachusetts he naturally gravitated into this State. The Massachusetts State Board was not notified of his behavior in New Hampshire and not knowing his record had no reason for taking action. This State has the ignominy of having this man among the accredited physicians because the Attorney General of New Hampshire apparently did not feel concerned about the good name of any other State, and only wanted to be sure that New Hampshire would no longer harbor this type of practitioner. He apparently felt no concern for the possible victims of this detestable type of doctor. It is common knowledge that as a rule the criminal abortionist seldom reforms so long as he can secure victims willing and able to pay for his services.

It is a fair contention that each State should carry the responsibility of dealing with men of this type to the limit of the resources of the law, and this action by the head of the legal machinery of New Hampshire merits scathing criticism. If William M. Robb is guilty we hope that this State will take appropriate action.

### THE JOINT MEETING OF THE FOUR WESTERN DISTRICTS

This meeting will be held in Springfield at the Kimball Hotel probably in October. The exact date will be announced later. An especial feature will be an address by Dr. William Allen Pusey, President Elect of the American Medical Association. His subject will be "Our Changing Knowledge of Eczema."

Luncheon will be served at one o'clock, to be followed by the speakers.

Dr. James S. Stone will also address the meeting on the subject of "The State House Program for the Coming Year."

It is hoped that Ex-President Alfred Worcester, who inaugurated the plan for these meetings, will be present. President E. H. Bigelow will bring the greetings of the State Society.

All members of the Society are invited and it is hoped that Dr. Pusey will have a large audience. Dr. A. P. Merrill, who is in charge of the arrangements, would like to know in advance how many will be at the luncheon.

These joint meetings have been most enjoyable and this one will be up to the standard set by the western counties.

It is an honor to have the President of the A. M. A. in Massachusetts.

### Miscellany

#### FIFTY-SECOND ANNUAL MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION

THE American Public Health Association extends to the public health profession and others interested, a cordial invitation to attend its Fifty-Second Annual Meeting, in Boston, Massachusetts, October 8-11. Headquarters will be at the Copley-Plaza Hotel.

On Monday evening, October 8, the formal opening session will be followed by a reception. On Wednesday evening, October 10, Sir Thomas Oliver, distinguished English industrial hygienist, and Dr. George E. Vincent, President of the Rockefeller Foundation, will address the second general session. The scientific program, embracing all branches of public health, will be held according to sections as follows: Public Health Administration, Laboratory, Sanitary Engineering, Vital Statistics, Child Hygiene, Food and Drugs, Industrial Hygiene, Public Health Nursing, Health Education and Publicity.

Among the important subjects scheduled for discussion are papers on food inspection, growth of children, full-time health officers, mental hygiene in the school program, nutrition work, the effect of so-called moonshine liquors, standards for schoolhouse construction and sanitation, epidemiology, better birth registration, organic heart disease, studies on the etiology of common colds, water supply and purification, mosquito control, etc.

An important report of the Committee on Municipal Health Department Practice will be presented in the Public Health Administration Section. At this time the announced plan for the awards to cities for distinctive community service will be discussed. The problems of health

officers of small communities will be specially considered at a round table discussion scheduled for Wednesday morning. The clinic on printed matter, which has proved valuable in past years, will be held again this year by the Section on Health Education and Publicity. At this clinic samples of public health publicity will be examined and criticized by experts. Of special interest also is the report of the Committee on Health Problems in Education of the Child Hygiene Section.

#### FIRE PREVENTION WEEK

FROM October 7 to 13 inclusive will be given to fire prevention demonstrations, under the direction of the National Board of Fire Underwriters.

America's fire loss last year amounted to \$521,860,000. This amount exceeds the record for a single twelve months' period in any country at any period in the world's history. The number of fatalities exceeded 15,000, the majority of the victims being women and children. The chief causes of fires are unextinguished matches, improperly installed stoves, and furnaces, gasoline, and electricity.

Fires occur in American homes at the rate of 359 in each twenty-four hours. More persons are seriously maimed than are killed by fire.

It is estimated that 90 per cent. of all fires are preventable.

#### NOTED SURGEON JOINS WOMAN'S MEDICAL COLLEGE STAFF

DR. W. J. BRANSFIELD, well known surgeon, with an unusual war record, has been appointed Clinical Professor of Surgery at the Woman's Medical College of Pennsylvania (Philadelphia), and a member of the surgical staff at the Hospital of the College, according to an announcement made recently at the College.

Dr. Bransfield succeeds, both on the faculty and on the hospital staff, one of the physicians who resigned last year. This is one of the more important steps taken by the college authorities in the reorganization of its faculty and staff.

Dr. Bransfield, who specializes in surgery, served overseas with an operating team at the front.

Dr. Bransfield, a graduate of Wesleyan University and the University of Pennsylvania, is also on the surgical staffs of St. Agnes' and St. Vincent's Hospitals. He was formerly Medical Director at St. Agnes' Hospital, and is now chairman of the Advisory Board there.

His war record includes service with the British Army at the front, and the 32nd Division, 29th Division, and 92nd Division, of the United States Army, as Captain.

Dr. Bransfield, who has published numerous papers on surgery and its allied subjects, is a member of the County Medical Society, the Academy of Surgery, the Philadelphia College of Physicians, the Philadelphia Country Club, and the Racquet Club.

#### WORCESTER DISTRICT MEDICAL SOCIETY

##### FURTHER DETAILS OF THE SEPTEMBER MEETING

THE first regular meeting of the Society was held at the University Club September 12 at 8 o'clock in the evening. The new president, Dr. A. W. Marsh, presided.

At the business meeting it was voted that it was the sense of the Society that the Annual Dinner of the State Society should be held at noon. The Society also approved the resolutions passed by the American Medical Association at the meeting held in San Francisco in which the action of some physicians in prescribing alcoholic liquors for other than medicinal purposes was deplored.

By a close vote of 16 to 14 it was voted that papers for future meetings should be limited to one hour in duration.

On motion of Dr. Trowbridge it was declared the duty of the president to appoint a committee to officially represent the Society at the funeral in case of the death of any member.

As the first speaker of the evening Dr. H. I. Bowditch of Boston gave a short talk on "X-Ray Treatment of Pertussis," in which he gave his favorable experience with its use, and suggested several problems to be studied in the further use of this method of treatment.

Owing to the illness of Dr. William McKibben, the Secretary, Dr. A. W. Atwood read his paper on "A Study of 1000 Cases of Pertussis," in which he stressed the use of large doses of pertussis vaccine.

Dr. C. A. Sparrow read a paper on "Pyelitis in Infancy." He urged more frequent examinations of the urine in infants when looking for obscure causes of fever. He recommended alkaline treatment with large quantities of water.

Dr. G. N. Cobb read a paper on "Thymic Asthma," in which he proved by statistics that enlarged thymus was much more frequent than usually supposed and was frequently the cause of sudden death in children. He said that often the mere exposure of a child to the x-ray for diagnostic purposes would be sufficient to produce immediate relief from symptoms.

#### BOSTON HEALTH SHOW

Reserve sufficient time for attendance at the Boston Health Show in Mechanics Building, October 6 to 13.

# FRANKLIN AND HAMPSHIRE DISTRICT MEDICAL SOCIETIES

THE joint meeting of the Franklin-Hampshire District Medical Societies was held at Hotel Lathrop, South Deerfield, Mass.

This meeting has been an annual affair and has been greatly enjoyed. This year the attendance was somewhat smaller than usual, but what it lacked in numbers it more than made up in enthusiasm.

The societies entertained as their guest Dr. Bigelow, president of the State Society, who made a few appropriate remarks in opening the meeting.

Dr. H. W. Van Allen of Springfield was the main speaker, his subject being "Notes on the Recent Developments in Radiotherapy." The Doctor's remarks were informal, but he covered the subject in a most interesting way.

Dinner followed the meeting.

CHARLES MOLINE,  
Secretary, Franklin District.

## RÉSUMÉ OF COMMUNICABLE DISEASES

JULY, 1923

(Department of Public Health)

### GENERAL PREVALENCE

THE month of July showed a decrease in the number of reported cases of the more common diseases, as will be seen by the figures given below. Typhoid fever, however, increased from 44 cases reported during June to 58 for this month.

	July 1923	June 1923	July 1922
Chicken-pox	377	689	136
Diphtheria	484	613	380
Measles	1,037	2,985	1,274
Mumps	269	729	184
Scarlet fever	437	1,054	226
Tuberculosis, pulmonary	506	500	454
Typhoid fever	58	44	73
Whooping cough	472	708	413
Gonorrhea	411	419	407
Syphilis	142	141	155

### RARE DISEASES

*Actinomycosis* was reported from Boston, 1.

*Anterior poliomyelitis* was reported from Clinton, 1; Marlboro, 1; New Bedford, 1; Revere, 1; West Springfield, 1; Winchester, 1; Worcester, 2; total, 8.

*Dog-bite (requiring anti-rabic treatment)* was reported from Amesbury, 2; Andover, 2; Boston, 3; Braintree, 1; Cambridge, 7; Chelmsford, 1; Chelsea, 4; Dartmouth, 1; Everett, 5; Lowell, 16; Malden, 3; Mansfield, 3; Medford, 5; Newton, 1; Somerville, 2; Watertown, 1; Worcester, 1; total, 58.

*Encephalitis lethargica* was reported from

Boston, 3; Cambridge, 1; Malden, 1; Worcester, 3; total, 8.

*Epidemic cerebrospinal meningitis* was reported from Boston, 5; Fall River, 1; Groveland, 1; Lynn, 1; Methuen, 1; Scituate, 1; Taunton, 1; total, 11.

*Hookworm* was reported from Boston, 1.

*Malaria* was reported from Boston, 2; Newburyport, 1; total, 3.

*Pellagra* was reported from Boston, 1; Danvers, 1; Newton, 1; Northampton, 1; Peabody, 1; total, 5.

*Septic sore throat* was reported from Boston, 2; New Bedford, 1; Quincy, 2; Winthrop, 1; total, 6.

*Smallpox* was reported from Malden, 1; New Bedford, 1; total, 2.

*Tetanus* was reported from Boston, 1; Cambridge, 1; Fall River, 1; New Bedford, 1; Springfield, 1; Westfield, 1; total, 6.

*Trachoma* was reported from Boston, 3; Clinton, 1; Holyoke, 1; Lowell, 3; Malden, 1; total, 9.

## DISTRIBUTION

### ALL COMMUNICABLE DISEASES

	July 1923	July 1922
Total cases (all causes)	4626	4024
Case rate per 100,000 population	116.5	102.2

### Certain Prevalent Diseases

	July 1923	July 1922
Diphtheria:		
Total cases	484	380
Case rate per 100,000 population	12.2	9.7

Cities and towns noticeably exceeding their median endemic indexes\*

	(0)	4
Acushnet	(0)	4
Boston	(100)	205
Brockton	(8)	12
Weymouth	(0)	3
Everett	(4)	13
Winthrop	(1)	4
Lawrence	(7)	12
Medford	(2)	7
Waltham	(4)	7
Watertown	(2)	5
Athol	(0)	9
Oxford	(0)	7
Worcester	(11)	34
Belchertown	(0)	3
Holyoke	(3)	9
Ware	(0)	4
Stockbridge	(0)	3

	July 1923	July 1922
Measles:		
Total cases	1037	1274
Case rate per 100,000 population	26.1	32.4

Cities and towns noticeably exceeding their median endemic indexes\*

	(3)	16
Barnstable	(3)	16
Chatham	(0)	5
Braintree	(2)	33
Bridgewater	(0)	10
Brockton	(10)	23
Canton	(1)	4

	(0)	4	July 1923	July 1922
Easton	(0)	4		
Framingham	(3)	6		
Holbrook	(0)	13		
Marlboro	(1)	5		
Newton	(6)	18		
Rockland	(0)	23		
Stoughton	(0)	5		
Wellesley	(0)	9		
Amesbury	(0)	17		
Haverhill	(4)	39		
Melrose	(8)	24		
Merrimac	(0)	5		
Newburyport	(2)	6		
Rockport	(0)	4		
Belmont	(1)	18		
Lexington	(0)	18		
Methuen	(7)	23		
Watertown	(3)	14		
Winchester	(1)	18		
Fitchburg	(4)	29		
Holden	(0)	4		
Leominster	(5)	48		
Southbridge	(1)	18		
Spencer	(0)	23		
Westboro	(0)	6		
Worcester	(27)	55		
Enfield	(0)	12		
Ware	(0)	27		
Great Barrington	(0)	4		
Pittsfield	(1)	4		
		July 1923	July 1922	
Scarlet Fever:				
Total cases	437	236		
Case rate per 100,000 population	11.0	5.7		
Cities and towns noticeably exceeding their median endemic indexes*			July 1923	July 1922
Fall River	(6)	9		
Amesbury	(0)	3		
Avon	(0)	3		
Boston	(55)	112		
Braintree	(0)	4		
Brockton	(8)	13		
Brookline	(1)	6		
Cambridge	(6)	17		
Foxboro	(0)	3		
Natick	(0)	6		
Newton	(1)	4		
Quincy	(4)	14		
Chelsea	(4)	7		
Everett	(2)	5		
Haverhill	(3)	14		
Malden	(5)	13		
Melrose	(1)	3		
Reading	(0)	4		
Winthrop	(1)	3		
Andover	(0)	4		
Medford	(1)	6		
Gardner	(1)	4		
Worcester	(8)	20		
Holyoke	(1)	6		
Northampton	(1)	7		
Springfield	(4)	9		
West Springfield	(0)	4		
Westfield	(0)	3		
Orange	(0)	3		
Pittsfield	(3)	9		
		July 1923	July 1922	
Typhoid Fever:				
Total cases	58	73		
Case rate per 100,000 population	1.5	1.9		
Cities and towns noticeably exceeding their median endemic indexes*				
Nantucket	(0)	3		

## Whooping cough:

Total cases 472 418  
Case rate per 100,000 population 11.9 10.5

## Cities and towns noticeably exceeding their median endemic indexes\*

Falmouth (0) 8  
Provincetown (0) 3  
Ashland (0) 13  
Bridgewater (0) 3  
Brockton (14) 35  
Marlboro (0) 4  
Milton (1) 4  
Natick (0) 5  
Newton (13) 25  
Rockland (0) 3  
Everett (1) 5  
Haverhill (0) 16  
Melrose (1) 5  
Swampscott (0) 11  
Arlington (1) 6  
Belmont (2) 18  
Concord (0) 7  
Groton (0) 6  
Lawrence (11) 16  
Lowell (3) 6  
Methuen (1) 18  
Spencer (0) 3  
Deerfield (0) 4  
Holyoke (0) 6  
Ware (0) 8  
Greenfield (0) 5  
Stockbridge (0) 3

## Tuberculosis, Pulmonary:

Total cases 506 454  
Case rate per 100,000 population 12.7 11.5

## Tuberculosis, Other Forms:

Total cases 76 59  
Case rate per 100,000 population 1.9 1.5

\*The Median Endemic Index is obtained by arranging in arithmetical sequence the monthly totals of reported cases for the past five years and selecting the middle figure. The numbers in parentheses after the names of each city and town indicate the median endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

WEEK'S DEATH RATE IN BOSTON.—During the week ending September 15, 1923, the number of deaths reported was 141, against 169 last year, with a rate of 9.54, against 11.50 last year. There were 24 deaths under one year of age, against 37 last year. The number of cases of principal reportable diseases were: Diphtheria, 46; scarlet fever, 18; measles, 8; whooping cough, 8; typhoid fever, 3; tuberculosis, 34. Included in the above were the following cases of non-residents: Diphtheria, 6; scarlet fever, 4. Total deaths from these diseases were: Diphtheria, 4; typhoid fever, 1; tuberculosis, 16. Included in the above was the following case of a non-resident: Tuberculosis, 1.

## SUBSCRIPTIONS TO THE HISTORY OF THE MASSACHUSETTS MEDICAL SOCIETY

Middlesex South District reports 90 subscribers. Worcester District is second with 65.

# DIABETIC COLUMN

## AN ARGUMENT FOR STATING DIETS IN GRAMS PER KILO BODY-WEIGHT

Differences in the diabetic diets advocated by various investigators are today needlessly difficult to describe and understand, because they are stated in grams irrespective of the weight of the patient. Distinctive features may be revealed by stating the carbohydrate, protein, fat and calories in grams per kilogram body-weight. Accident affords a chance to compare three boys of the same age, receiving (1) a normal diet, (2) a diabetic diet with low-carbohydrate and high-fat, and (3) a diabetic diet designed to approach the normal ration, especially as regards high carbohydrate. Which type of diet is the better, time will tell.

TABLE

DIETS OF NORMAL AND DIABETIC CHILDREN COMPARED  
IN GRAMS OF FOOD PER KILOGRAM BODY-WEIGHT

Observer	Age	Carb. per Kilo	Prot. per Kilo	Fat per Kilo	Cal. per Kilo	Calories, in per cent. above basal	Weight, in per cent. below (—) normal
Holt & Fales' normal	4y. 5m.	10.1	3.3	3.2	83	77	0
Newburgh & Marsh	4y. 5m.	1.1	2.1	7.8	83	77	+6
H. Gray	4y. 5m.	7.8	2.9	3.8	73	55	—4

H. GRAY, M.D.

## News Items

PROFESSOR W. T. COUNCILMAN.—*Science* reports that Professor and Mrs. Councilman left the Tokio region before the disaster in Japan and are safely on the way to China.

X-RAY LABORATORIES.—No one may maintain, operate or conduct an x-ray laboratory in New York City without having first obtained a permit issued by the Board of Health.

BEVERLY HOSPITAL.—A demonstration clinical meeting was held at the Beverly Hospital, Tuesday, September 18. Interesting cases were shown and discussion followed.

INSUFFICIENTLY HEATED TENEMENTS.—Last January a landlord was given a sentence of five days in jail for failing to provide 68 degrees of heat for a tenant. New York City is under compelling regulations.

JAIL SENTENCES FOR SELLING UNWHOLESOME FOOD.—Dealers in unwholesome sardines, milk below the standard grade and spot eggs have been sentenced to serve time in jail in New York City.

SALE OF VERONAL AND SIMILAR DRUGS.—The Department of Health, City of New York, has found that fatalities have been caused by veronal, veronal sodium, and several other drugs, and has adopted a section of the Sanitary Code which prohibits the sale at retail of veronal, veronal sodium, luminal, luminal sodium, sulphonal, trional, or tetronal except upon the written prescription of a licensed physician. Since the adoption of this regulation few, if any, deaths have been traced to the use of these drugs.

## Obituary

EVERETT M BOWKER, M.D.

DR. EVERETT M BOWKER, a physician of Brookline, died of heart disease at his summer home in Cataumet, Mass., September 8, 1923, at the age of fifty-eight.

He was a member of the Board of Norfolk County Commissioners, as was his father, and formerly was a member of the town school committee and a selectman. He was a town meeting member and a former associate medical examiner for Norfolk County.

Dr. Bowker was born at Machias, Me., November 2, 1866, son of the late Watts H. Bowker, and came to Brookline with his parents when he was a child. He was educated in the Brookline public schools and at Harvard Medical School. Since receiving his degree from Harvard in 1891 and serving as house physician for two years at the Salem Hospital, he had been a general practitioner in Brookline.

He was a member of the United States Pension Board, of the Brookline Medical Club, the Massachusetts Medical Society, the American Medical Association, Beth Heron Lodge of Masons, Brookline Lodge of Elks, the Royal Arcanum and Odd Fellows. He is survived by his widow, Lucy A. (Griggs) Bowker, two daughters, Eleanor and Helen, and three sons, Philip, Harold and Everett M., Jr.

## THE ENGLISH PANEL SYSTEM

News from London is to the effect that many of the British physicians are planning to go on strike because the panel fee of \$2.40 yearly for each patient is to be reduced 65 cents if the government plans are carried out.

Correspondence

THE A. M. A. AUTOMOBILE EMBLEM

Southbridge, Mass., September 14, 1923.

Mr. Editor:

In regard to past discussion appearing in your columns on the A. M. A. auto emblem for physicians, it may be of interest to fellow members and police departments where the emblem is recognized, that a local veterinarian has displayed on his automobile an emblem, which on casual observation appears to be identical with the genuine article.

It would seem that if the emblem is to be of any use to the members of the A. M. A. its sale should be strictly limited.

If veterinarians display it, why may not plasterers, bricklayers, or members of healing cults display it?

NOEL G. MONROE.

NOTE: It is hoped that a law will be enacted which will prohibit the use of the emblem by all who are not registered physicians.—EDITOR.

DEATH NOTICES

DR. ROBERT PATRICK FAIR of Boston died at the home of his brother, Dr. John Francis Fair, at Cambridge, September 15, 1923, at the age of 53. He was a graduate of Harvard Medical School, in the class of 1900, a house officer on the Gynecological Service at the Carney Hospital, and practiced obstetrics.

He was a member of the American Medical Association and of the Massachusetts Medical Society.

Goss.—In Sacramento, Calif., July 10, Francis W. Goss, M.D., formerly of Roxbury. Funeral services at the chapel, Mt. Auburn Cemetery, Cambridge, on Wednesday, September 19, at 11 A.M.

The funeral of Dr. Francis W. Goss, for thirty-four years secretary of the Massachusetts Medical Society, was held at the chapel of Mt. Auburn Cemetery, Cambridge, September 19, 1923. The chief mourners were Mrs. Bruce T. Shute of Sacramento, his daughter, and Mr. J. W. Young of New York, a nephew. The Massachusetts Medical Society sent a beautiful large wreath of pansies and the services were attended by Dr. G. W. Gay of Chestnut Hill, a former president, and by Dr. E. H. Bigelow of Framingham Center, the present president.

MIDDLESEX NORTH DISTRICT

The next meeting of the Society (combined meeting) at North Reading Sanatorium, October 17. At Lowell, January 31, 1924. Annual meeting in April.

DISEASES REPORTED TO MASSACHUSETTS  
DEPARTMENT OF PUBLIC HEALTH

WEEK ENDING SEPTEMBER 8, 1923

Disease	No. of Cases	Disease	No. of Cases
Anterior poliomyelitis	7	Ophthalmia neonatorum	16
Chicken-pox	2	Scarlet fever	57
Diphtheria	150	Septic sore throat	1
Dog-bite requiring anti-rabies treatment	14	Suppurative conjunctivitis	5
Encephalitis lethargica	3	Syphilis	28
Epidemic cerebrospinal meningitis	1	Tetanus	2
German measles	2	Tuberculosis, pulmonary	119
Gonorrhea	90	Tuberculosis, other forms	13
Influenza	5	Typhoid fever	17
Malaria	1	Whooping cough	81
Measles	21		
Mumps	23		

The Massachusetts Medical Society

STATED MEETING OF THE COUNCIL

A stated meeting of the Council will be held in John Ware Hall, Boston Medical Library, on Wednesday, October 3, 1923, at 12 o'clock, noon.

Business:

1. Reading of record of last meeting.
2. Remarks by the President.
3. Report of Committee on Membership and Finance, on Membership.
4. Petition for Honorary Membership for Benjamin White, Ph.D.
5. Reports of committees appointed to consider petitions for restoration to the privileges of fellowship.
6. Report of Committee on Publications and Scientific Papers.
7. Report of Committee on Membership and Finance, on Finance.
8. Appointment of Auditing Committee.
9. Appointment of two delegates to the annual meeting of the Vermont State Medical Society at Bennington, October 11 and 12, 1923.
10. Final report of the Committee to Investigate the Medical Cults.

Incidental Business:

- (a) Report on the wishes of the District Medical Societies concerning the time of day at which the annual dinner shall be held.
- (b) More efficient propaganda at the State House as to the aims of the regular profession.

WALTER L. BURRAGE,

Secretary.

Brookline, September 26, 1923.

Councilors are reminded to sign an attendance book before the meeting.  
The Cotting Lunch will be served immediately after the meeting.

SOCIETY MEETINGS

DISTRICT SOCIETIES

Worcester District:—The meetings for the year are as follows: October 10 at Worcester State Hospital. Papers by Dr. Reginald Fitz and Dr. E. W. Taylor of Boston.  
November 14 in Whitinsville. Paper by Dr. Channing Frothingham of Boston.

December 12 in Worcester. Papers by Dr. Fred B. Lund of Boston and Dr. Michael F. Fallon and Dr. Walter Seelye of Worcester.

January 9 at St. Vincent Hospital, Worcester.

February 13 at Memorial Hospital, Worcester.

March 13 at City Hospital, Worcester.

April 10—A public meeting.

May 8—Annual Meeting.

Franklin District:—Society meets at Greenfield the second Tuesday of November, January, March, May, July, September. Annual Meeting in May.

Norfolk South District:—Meetings first Thursday of each month at 11.30 a. m. October at Norfolk County Hospital, Braintree; November, December, January, February, March, April, and May at United States Hotel, Boston. The November, February and May meetings are Stated Meetings.

Essex North:—Combined meeting with Middlesex North, Middlesex East and Essex South October 17, at 1.30 p. m., at North Reading State Sanatorium, North Reading. Semi-annual meeting at Haverhill, January 2, 1924. Annual Meeting at Lawrence, May 7, 1924.

Middlesex North:—Combined meeting with Middlesex East and Essex South, October 17, at North Reading Sanatorium. January 31, 1924, at Lowell. Annual Meeting in April.

Bristol South:—Semi-annual meeting will be held in New Bedford, November 1, 1923. The Annual Meeting will be held in New Bedford, May 1, 1924.

STATE, INTERSTATE AND NATIONAL SOCIETIES

October, 1923:—Semi-annual meeting of the New England Society of Psychiatry at the Concord State Hospital, Concord, N. H., October 3.

October, 1923:—Boston Health Show will be held in Boston, October 6-13, inclusive.

October, 1923:—Meeting of the American Health Association will be held in Boston, October 8-13, inclusive.

October 17-18, 1923:—Annual Meeting of New England Surgical Society in Boston.

For list of Officers of the Massachusetts Medical Society, see page vii of the Advertising Section.